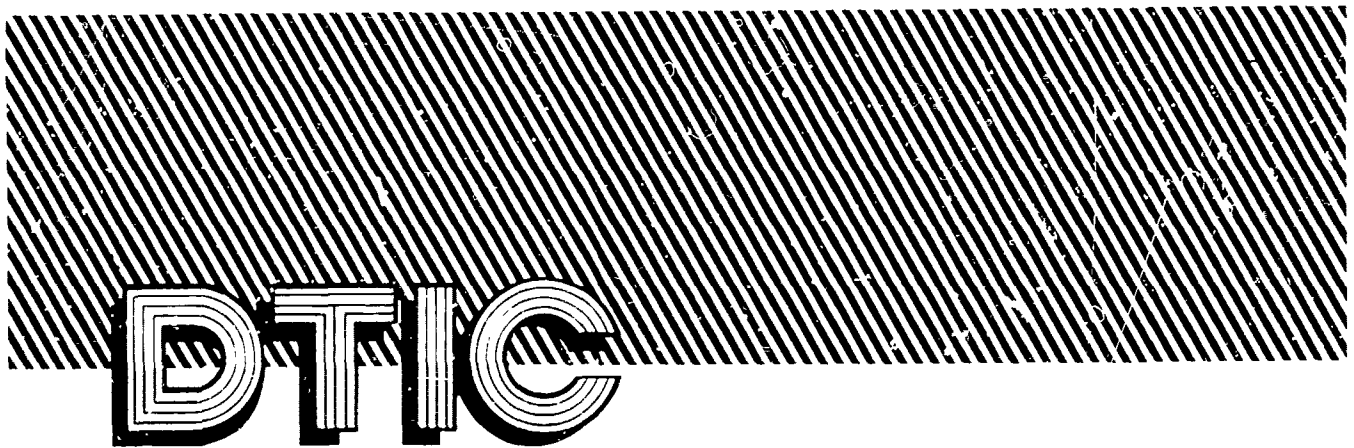


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**DTIC/BIB- 80/03**

**AD-A087 800**

# **COST EFFECTIVENESS ANALYSIS**

**A DTIC BIBLIOGRAPHY**

**DTIC-TOS  
Cameron Station  
Alexandria, Va. 22314**

**JULY 1980**

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**DEFENSE TECHNICAL INFORMATION CENTER  
DEFENSE LOGISTICS AGENCY  
Cameron Station  
Alexandria, Va. 22314**

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This bibliography contains unclassified-unlimited citations of reports on <i>Cost Effectiveness Analysis</i> . These citations emphasize program evaluations, management techniques, research and development decision making, management problems, tradeoffs, related cost analysis and methodology, and systems value engineering. Four computer-generated indexes provided are: Corporate Author Monitoring-Agency, Subject, Title and Personal Author.		



## F O R E W O R D

This bibliography contains 341 unclassified-unlimited citations on *Cost Effectiveness Analysis*.

These citations are studies and analyses pertaining to cost effective analysis relating to program evaluations, management techniques, design tradeoffs, related cost analysis and methodology, and systems value engineering.

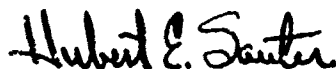
Entries have been selected from references processed into the Defense Technical Information Center data bank from July 1973 to February 1980.

This report supersedes DDC report bibliography on *Cost Effectiveness Analysis*, AD-A052 400, DDC BIB-78-01 dated April 1978.

Individual entries are arranged in AD number sequence under the heading bibliographic references. Computer generated indexes of Corporate Author Monitoring-Agency, Subject, Title and Personal Author are provided.

**BY ORDER OF THE DIRECTOR, DEFENSE LOGISTICS AGENCY**

**OFFICIAL**



**HUBERT E. SAUTER**  
Administrator  
Defense Technical Information Center



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-B009 681 13/10 15/5 5/9

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN DIEGO  
CALIF

Facilities Maintenance Demonstration  
Study.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Oct 73-30 Jun 75.  
JAN 76 98P Schwartz, Melvin A. ;  
REPT. NO. NPRDC-TR-76-29  
PROJ: SF555-25  
TASK: SF555-25-21

UNCLASSIFIED REPORT

DESCRIPTORS: (\*Frigates, Maintenance),  
(\*Maintenance, Shipboard), (\*Cost effectiveness,  
Naval personnel), Manpower, Cost analysis,  
Reduction, Attitudes(Psychology), Motivation,  
Skills, Naval training, Military facilities,  
Automation  
IDENTIFIERS: Facilities maintenance, Man hours,  
FF-1052 class vessels, Shipboard manning

(U)

(U)

Facilities Maintenance (FM), as currently performed by shipboard personnel, requires a considerable expenditure of man-hours and material resources. Due to a number of problems and practices, FM is not performed efficiently. As a result, man-hour expenditures are excessively high; ship's condition, cleanliness and appearance deteriorate; crew morale and motivation are undermined; and cost to the Navy is increased. Potential solutions to underlying problems were studied on an operational ship of the FF 1052 class. The solutions included a team approach to the FM work; an information management system for work scheduling; audiovisual training program in FM; improvements in FM equipment and materials; and environmental improvements. The findings of the study indicated that: (1) a significant reduction in man-hour expenditures and cost to the Navy is feasible through a systematic innovation program; (2) skill and knowledge of FM team personnel was significantly improved; (3) shipboard spaces are cleaner and better maintained with FM innovations; and (4) attitude and motivation of FM personnel are not positively affected.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-B009 251 17/2: 14/1

DEPARTMENT OF THE ARMY WASHINGTON D C

VHF-FM Portion of the Single Channel  
Ground and Airborne Radio Subsystem Concept  
Formulation Package, Appendix IV, Cost and  
Operational Effectiveness Analysis.

(U)

DESCRIPTIVE NOTE: Technical rept. Jan-Oct 75.  
OCT 75 33P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-C004 928L and  
Annex A to Appendix 4, AD-B009 252L.

DESCRIPTORS: (\*Communication and radio systems, Very  
high frequency), (\*Radio equipment, \*Cost  
analysis), (\*Cost effectiveness, Radio  
equipment), Effectiveness, Airborne, Channels,  
Ground support equipment, Frequency modulation,  
Electronic warfare, Threats, Performance,  
Vehicles, Manportable equipment, Communications  
networks

(U)

IDENTIFIERS: \*Operational effectiveness, SINGARS  
project, Figure of merit, Subsystems, Concept  
formulation

(U)

This appendix is a compilation of two separate and  
distinct cost and operational effectiveness analyses  
(COEA) which were conducted to evaluate the four  
alternatives recommended to satisfy the SINGARS-  
V requirements. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZCM07

AD-B007 209 5/9 14/1

CALSPAN CGRP BUFFALO N Y

B-1 Systems Approach to Training. Volume  
II. Appendix A. Cost Details.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 74-Oct 75.

JUL 75 31P Reif, Hans G.; Ring, William

F. H.;

REPT. NO. CALSPAN-FE-5552-N-1-Vol-2, CALSPAN-TM-  
SAT-1-Vol-2

CONTRACT: F33657-75-C-0021

UNCLASSIFIED RE: JRT

SUPPLEMENTARY NOTE: See also Volume 3. AD-B007  
210L.

DESCRIPTORS: (\*Flight training, Systems analysis),  
(\*Air Force training, Cost estimates), Cost  
analysis, Flight crews, Jet bombers,  
Courses (Education), Training devices, Costs,  
Data bases, Base lines, Air Force procurement,  
Maintenance, Life cycles, Instructional materials,  
Cost effectiveness

(U)

IDENTIFIERS: B-1 aircraft, Life cycle costing

(U)

The purpose of this report is to document the  
details of the cost analysis for the B-1 Aircrew  
Training System. Included are the cost data  
base, which is the raw material from which cost  
estimates are made, the actual values used to  
evaluate the recommended, baseline system, and  
results from the other analyses which were conducted  
on selected parameters. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZCM07

AD-B006 685 15/5 13/6

ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH  
KANS

An Analysis of Cost Implications of  
Accomplishing Direct Support Maintenance  
Tasks for the Truck, 1/4-Ton, M151 Series  
at the Organizational Maintenance Level.

(U)

DESCRIPTIVE NOTE: Final rept..

JUN 75 133P Fischer, Donald C. . Jr.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: (\*Trucks, Maintenance),

(\*Maintenance management, \*Costs),

(\*Maintenance, Cost effectiveness), Army

operations, Military vehicles, Management,

Organizations, Optimization, Logistics support,

Tools, Army training, Mechanics, Repair,

Replacement, Automotive components, Computerized

simulation, Statistical analysis

(U)

IDENTIFIERS: \*M-151 trucks (1/4-ton)

(U)

The study tests the hypothesis that if  
responsibility for replacement of engines,  
transmissions, clutches, and steering gear assemblies  
for the M151 1/4-ton truck series was moved to  
organizational level, there would be significant cost  
savings. The history of automotive maintenance  
management is examined. Tool and training cost  
implications are investigated. A computer  
simulation generates direct support maintenance  
requirements, costs, and tests results for  
statistical significance. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-8006 333 17/9 9/5 14/1 13/10

NAVAL ELECTRONICS LAB CENTER SAN DIEGO CALIF

Multifrequency Arrays: Design and Cost Considerations.

(U)

DESCRIPTIVE NOTE: Research and development rept. 3 Mar 69-2 Jul 75.

JUL 75 45P Provencier, J. H. ; Vaughn,

G. ; Proctor, D. ; Boyns, J. E. ;

REPT. NO. NELC/TR-1956

PROJ: SF12-121, NELC-D210

TASK: SF12-121-417

UNCLASSIFIED REPORT

DESCRIPTORS: (\*Phased arrays, Hydrofoil craft). Cost analysis, Phase shift circuits, Gain, Arrays, Costs, Weight, Lightweight, Errors, Search radar, Radar tracking, Extremely high frequency, Integrated circuits, Wavelengths IDENTIFIERS: Design, Multifrequency, Multiband antennas

(U)

(U)

IAC ACCESSION NUMBER: GC-753059

IAC DOCUMENT TYPE: GACIAC -HARD COPY--

This report describes several multiband antenna techniques and a method of cost analysis for array antennas. A concept is given which has potential to reduce overall array costs for large phased array systems by using component commonality to propagate several frequency bands. Techniques which can be used to reduce the cost, weight, and complexity of phased arrays are given, as well as potential applications for these techniques on small craft such as the hydrofoil. (Author)

(U)

IAC SUBJECT TERMS: G--(U)RADAR, MULTIFREQUENCY RADAR, RADAR ANTENNAS, PHASED ARRAY ANTENNAS, SEARCH RADAR, TRACKING RADAR, SIDELOBES, ANTENNA RADIATION PATTERNS, ANTENNA ARRAYS, PHASE ERROR, PHASE SHIFT, OMNIDIRECTIONAL ANTENNAS, ANTENNA SCANNERS, LIGHTWEIGHT, ELEVATION SCAN, GIGAHERTZ 2-3, SHIPBORNE EQUIPMENT, HYDROFOILS, COMPUTERIZED MODELS, COST ANALYSIS;

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-8002 859 1/3 14/1 11/4

DOUGLAS AIRCRAFT CO LONG BEACH CALIF

Conceptual Design Studies of Composite AMST.

(U)

DESCRIPTIVE NOTE: Final technical rept. 29 May 73-23 May 74.

OCT 74 218P Nelson, W. D. ; Wilson, H.

W. ; Hart-Smith, L. J. ; Cominsky, A. ; Scott.

P. W. :

REPT. NO. MDC-J446

CONTRACT: F33615-73-C-5164

MONITOR: AFML TR-74-164

UNCLASSIFIED REPORT

DESCRIPTORS: (\*Short takeoff aircraft, \*Composite materials), (\*Composite materials, \*Airframes), (\*Cost analysis, \*Short takeoff aircraft), Jet transport planes, Weight reduction, Graphite, Carbon fibers, Epoxy resins, Wings, Fuselages, Structural members, Horizontal stabilizers, Vertical stabilizers, Shells (Structural forms), Sandwich panels, Laminates, Sandwich construction, Honeycomb cores, Tape wound construction, Costs, Reduction, Life cycles, Maintenance, Performance (Engineering) IDENTIFIERS: Advanced medium STOL transports, C-15 aircraft, Thornel 300 fibers, Truss webs, JT8D-17 engines

(U)

(U)

A current Advanced Medium STOL Transport (AMST) production aircraft configuration was used as a baseline to determine vehicle performance and cost improvements accruing from the maximal use of advanced composite materials in the airframe. The primary wing and empennage box structure and fuselage shell applications were emphasized together with selected applications in secondary structures to reduce the weight of the airframe. The properties of high-strength graphite-epoxy composites (representative of Thornel 300 fibers) were used in the application studies. Material costs representative of Thornel 300/epoxy prepreg and a lower cost pitch-based fiber/epoxy prepreg were used in the cost analyses.

(U)

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AD-8002 859

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-B002 031 17/2 12/2

MARTIN MARIETTA AEROSPACE ORLANDO FLA COMMUNICATIONS AND ELECTRONICS DIV

Integrated Tactical Communications System (INTACS). Task III. Communications System Effectiveness and Cost Methodology Development.

(U)

DESCRIPTIVE NOTE: Final rept.

PR 74 240P

REPT. NO. OR-12822-1

CONTRACT: DAAG39-73-C-0248

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Task 4 Supplement Dated Dec 74, AD-B002 032L.

DESCRIPTORS: (\*Tactical communications. Integrated systems), Army, Systems analysis, Methodology, Cost effectiveness, Communications networks, Systems engineering, Computerized simulation, Cost analysis, Risk, Sensitivity, Trade off analyses (U)

IDENTIFIERS: MRF(Mid Range Time Frame).

Mid range time frame (U)

The cost and effectiveness methodology developed in Task III of the INTACS program offers a direct, dependable, and flexible means for evaluating the capabilities and cost of the candidate mid range time frame Army communications systems concerned. At the same time, it constitutes an effective tool for ranking these systems further on the basis of technological risk. Thus, the methodology developed will facilitate the selection of a preferred system as intended. (Author) (U)

AD-B002 031

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-B001 641 15/7 5/3 12/1 9/2

OHIO STATE UNIV COLUMBUS SYSTEMS RESEARCH GROUP

Development of a Dynamic Simulation Filter.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 71-Oct 74.

NOV 74 96P

Clark, Gordon M. ;

McCartney, Charles ;

REPT. NO. RF-3248-FR-74-1(u)

CONTRACT: DAAH01-71-C-1258

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*war games, \*Decision theory), (\*Computerized simulation, Optimization), (\*Costs, Computerized simulation), Selection, Efficiency, Hypotheses, Filters, Correlation techniques, Experimental design, Variations, Subroutines, Reduction, Blocking, Estimates, Low costs, Random variables, Algorithms, Dynamic response, High resolution, Analysis of variance, Flow charting, Military tactics, Decision making, Land combat, Tactical analyses, Guided missiles, Weapon systems, Systems analysis, Casualties, Pseudo random systems, Mathematical models, Homogeneity (U)

IDENTIFIERS: Dyncom computer program, Filter models, Alternatives (U)

The Filter Simulation Experimental Concept for reducing the cost of identifying a preferred system alternative by a combat simulation is investigated. When using this concept, partial battles are simulated to screen candidate alternatives. The Filter concept of simulation experiments is an application of the block experimental procedure used in experimentation with physical systems. Increased correlation among alternatives improving the efficiency of the method is achieved by the use of common random number streams for all alternatives within a block. An experimental model was developed to represent effects of blocked experiments on combat simulation results, and this model includes heterogeneous variances and correlated effects. Using this model, estimators for the variance of average system performance and for the variance of the difference between the average performances of two systems were derived. (U)

AD-B001 641

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A082 423 12/2

CARNEGIE-MELLON UNIV PITTSBURGH PA MANAGEMENT SCIENCES RESEARCH GROUP

The Non Candidate Constraint Method for Reducing the Size of a Linear Program. (U)

DESCRIPTIVE NOTE: Management sciences research rept.,  
FEB 80 17P Sethi, Awanti P.; Thompson, Gerald L.;  
REPT. NO. MSRR-455, WP-52-79-80  
CONTRACT: N00014-75-C-0621

UNCLASSIFIED REPORT

DESCRIPTORS: \*Simplex method. \*Cost effectiveness. Problem solving. Computations. Formats. Flow charting (U)  
IDENTIFIERS: Constraints. MUNR047048 (U)

A non candidate constraint in a linear program is one which never contains a pivot element during the course of solving the problem. Discovering non candidate constraints is computationally costly since their discovery, in general, depends on the actual sequence of pivots used. Knowing which constraints are non candidate is of great computational benefit since they need not be kept in updated form. Our experience indicates that from 50 to 80 percent of the constraints in randomly problems are non candidates at least part of the time. In this paper we present a learning approach to the identification of non candidate constraints. At each iteration we determine which constraints can potentially be pivotal; these are candidate constraints and all others are non candidate constraints on that step. On proceeding with the simplex method we update only the candidate constraints. If a non candidate constraint becomes candidate on a later step, we update it and add it to the candidate list. Although the constant checking of constraints to see whether they are changing from being candidate to non candidate is computationally costly, we obtain the computational benefit of having to keep in updated form a much smaller tableau. The net benefit of using this strategy is positive and results in a 25 to 50 percent reduction in total computation time. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A082 343 5/9

MCDONNELL DOUGLAS ASTRONAUTICS CO-ST LOUIS MO

Low-Cost Terminal Alternative for Learning Center Managers. (U)

DESCRIPTIVE NOTE: Final rept.,  
FEB 80 22P Nix, C. Jerome; Tate, Thompson; Dutka, Stephen C.; Montgomery, Harold L.; Showers, David P.;  
CONTRACT: F33615-78-C-0037  
PROJ: 1121  
TASK: 02  
MONITOR: AFHRL IR-79-77

UNCLASSIFIED REPORT

DESCRIPTORS: \*Terminals. \*Data processing terminals. \*Computer aided instruction. Training. Cost effectiveness. Requirements. Surveys. User needs. Cost analysis. Low costs. Costs. Reduction. Savings. Facilities (U)  
IDENTIFIERS: WUAFHRL11210229, PE62205F (U)

This study established the feasibility of replacing high performance and relatively expensive terminals with less expensive ones adequate for supporting specific tasks of Advanced Instructional System (AIS) at Lowry AFB, Colorado. Surveys of user requirements and available devices were conducted and the results used in a system analysis. The results of the analysis formed the basis for determining the detailed hardware requirements and subsequent hardware selection, procurement and installation. Additionally, the software modifications necessary to accommodate the new hardware were made and the resultant total system was evaluated in an operational training environment. (U)  
(Author)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A082 328 17/4 9/4 17/2.1

TEXAS A AND M UNIV COLLEGE STATION DEPT OF ELECTRICAL  
ENGINEERING

Low Cost Anti-Jam Digital Data-Links  
Techniques Investigations. Volume III. (U)

DESCRIPTIVE NOTE: Final technical rept. 1 Mar 78-15  
Apr 79 On Phase 3.

MAY 79 77P Painter, John H. ;

CONTRACT: F33615-75-C-1011

PROJ: 2305

TASK: 'R3

MONITOR: AFAL TR-77-104-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A048 181  
and Volume 2, AD-A082 327.

DESCRIPTORS: \*Radio anti-jamming. \*Data links,  
\*Information theory. \*Signal processing. \*Radio  
equipment, white noise. Radio navigation. Digital  
systems. Digital computers. Multipath transmission.  
Radio interference. Integrated systems.  
Mathematical models. Low costs. Monte Carlo  
method. Optimization. Algorithms. Modems.  
Sampling. Estimates. Demodulation. Airborne  
IDENTIFIERS: Recursive detectors. Colored noise.  
CDC 6600 computers. Multiplicative noise.  
IDEI(Integrated Detection Estimation and  
Identification). Additive noise. PE61102F.  
WUAFAL2305R301 (U)

This report documents the final phase of research  
under the subject contract. Previous results showed  
that the Minimum Probability of Error recursive  
detector for colored plus white noise, tracks the  
colored noise and subtracts it from the data. The  
present effort investigated the effects on optimum  
detector performance of carrier phase estimation. A  
good characterization of the effects was obtained.  
(Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A082 120 1/3 20/1

UNITED TECHNOLOGIES CORP WINDSOR LOCKS CONN HAMILTON  
STANDARD DIV

Influence of Noise Reduction on Weight and  
Cost of General Aviation Propellers. (U)

DESCRIPTIVE NOTE: Final rept..

JUN 79 111P Klatte, Robert J. ; Metzger,

Frederick B. ;

CONTRACT: DDT-FA78WA-4111

MONITOR: FAA-AEE 79-18

UNCLASSIFIED REPORT

DESCRIPTORS: \*Propeller noise. \*Noise reduction.  
Costs. Weight. Performance(Engineering).  
Aircraft. Civil aviation. Mathematical prediction.  
Blade airfoils. Sizes(Dimensions). Shape  
IDENTIFIERS: Arrow 2 aircraft. Debonair aircraft.  
Ducness aircraft. Twin Otter aircraft. General  
aviation (U)

Results of a study are reported in which the  
influence of noise reduction on weight and cost of  
propellers used in General Aviation aircraft was  
evaluated. Aircraft performance was not to be  
degraded by installation of the reduced noise  
propellers. Only propeller modifications were  
permitted. Engine modifications, such as  
introduction of a gearbox to reduce noise by  
reduction of RPM, were not permitted in the study.  
Major factors in noise reduction found promising in  
the study were (1) optimization of performance by use  
of the best available airfoils. (2) use of thin  
airfoils and a narrow elliptical tip blade planform.  
and (3) increasing the number of blades consistent  
with maintaining aircraft performance. For the  
three aircraft studied (a single engine, a light twin  
and a heavy twin) the flyover noise reduction  
potential varied from 3 to 8 dBA with no weight or  
cost penalty. Greater reductions in noise resulted  
in increased weight and/or cost penalties. Also, in  
some cases, engine noise would have to be reduced to  
achieve greater reductions. The progress by  
General Aviation aircraft manufacturer's in  
reducing noise is indicated by the finding that the  
most recent aircraft design had the smallest noise  
reduction potential. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A082 028 1/3 21/5 21/7

BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

Cost/Benefit Tradeoffs Available in  
Aircraft Noise Technology Applications in the  
1980's.

(U)

DESCRIPTIVE NOTE: Final rept..

DEC 79 175P Wilby, John F. ; Galloway,

William J. ;

REPT. NO. 6BN-3856

CONTRACT: DDT-FA77NA-4037

MONITOR: FAA/EE 80-2

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft noise, \*Noise reduction,  
Jet transport planes, Jet engine noise,  
Turbomachinery, Combustion, Propeller noise,  
Piston engines, Airframes, Aerodynamic noise,  
Turbofan engines, Control, Benefits, Costs,  
Performance(Engineering), Trade off analyses

(U)

The current status of aircraft noise control technology is reviewed to identify those measures that have a reasonable potential for application to aircraft coming into service in the 1980's. Noise reduction achievable when these noise control measures are applied to two transport category airplanes, a business jet, and a small propeller-driven twin is determined. Costs and performance penalties are determined for each noise control option. Benefits are measured by reductions in FAR 36 certification noise levels and in reductions in EPNL contour areas. The study shows that current, late 1970's, noise control practices permit transport category airplanes to meet the FAR 36 Stage 3 noise limits, yet application of additional noise control measures is not likely to provide additional reduction of the noise levels for these aircraft by more than 3 decibels. New business jet noise levels will be as much as 10 decibels lower than Stage 3 limits for takeoff, and as much as 5 decibels lower on approach, with additional reductions of more than 3 decibels unlikely. Introduction of newly designed, geared reciprocating engines would provide reductions of 10 or more decibels for high performance single and twin-engine, propeller-driven small airplanes, relative to existing practice. (U)

AD-A082 028

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 999 15/5

AIR FORCE ACADEMY CO

Some Fundamental Properties of Governmental  
Expenditure Patterns--Theory and Evidence  
Based on Military Expenditures.

(U)

DESCRIPTIVE NOTE: Final rept..

FEB 80 33P Weida, William J. ;

REPT. NO. USAFA-TR-80-3

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Forecasting, \*Cost analysis,  
Weapons, Patterns, Theory, Risk, weapon  
systems, Curve fitting, Growth(General)  
IDENTIFIERS: Government expenditures, Military  
expenditures

(U)

(U)

This paper proposes the thesis that there is some common element which links all military expenditures. That element is the growth curve--the idea that government expenditures proceed in a logical, well-ordered pattern, building on what has happened in the past and predetermining what will happen in the future. Considered rationally, there is simply not other way to do things when large amounts of money and effort are expended. And yet, for reasons which are more based on the academic mystique than logic, this important, underlying factor which determines the way in which money is spent is seldom exploited. The result is poor forecasts, and the solution to the problem is simple. The research in this paper argues that the growth process is the driving force behind both individual weapon systems costs and the expenditure of monies in entire weapon cost categories. This research has also shown that a knowledge of the growth curve will allow useful forecasting in the presence of data so sparse that time series techniques may not be able to function. In sum, the research cited in this paper would seem to indicate that, given the proper methods of normalizing the data and calculating the curve form, the growth curve could serve as the major tool in forecasting this and other countries' military expenditures. (Author)

(U)

AD-A081 999

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOW07

AD-A081 990 13/9

THIOL CORP HUNTSVILLE AL HUNTSVILLE DIV

Methodology for Producing Low Cost/  
Disposable Mandrels.

(U)

DESCRIPTIVE NOTE: Final technical rept. Nov 75-Dec 79.

DEC 79 229P Webb, G. E. ; Vance, S. L.

; Manning, H. E. ; Clark, H. T. ; Byrd, J. D. ;

REPT. NO. U-79-03

CONTRACT: DAAK40-77-C-0039

MONITOR: DRSMI/RK CR-80-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Mandrels. \*Production. \*Methodology.  
Solid propellant rocket engines. Low costs.  
Disposal. Batch processing. Manufacturing.  
Casting. Tools. Foam. Curing. Pull tests.  
Cost estimates. Die casting. Injection molding  
IDENTIFIERS: Disposal mandrels

(U)

(U)

This report describes work accomplished during a  
program to develop manufacturing methods and  
technology required to reduce the cost of batch  
processing of small, high production motors such as  
SEAS, Viper, and FFR by using disposable (low  
cost throw-away) casting fixtures using Quick Cure  
HTPB propellant. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOW07

AD-A081 859 22/1 9/2 14/1 15/5  
22/2

RAND CORP SANTA MONICA CA

Cost-Effectiveness Measures of Replenishment  
Strategies for Systems of Orbital Spacecraft.

(U)

DEC 79 STP Krell, Bruce E. ;

REPT. NO. RAND/N-1295-1F

CONTRACT: F49620-77-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: \*Artificial satellites. \*Replenishment.  
\*Computerized simulation. \*Cost effectiveness.  
Methodology. Life cycle costs. Launch vehicles.  
Space shuttles. Computer programming. Efficiency.  
Formats. Flow charting

(U)

For many years the U.S. Air Force has  
employed large-scale, discrete-event digital  
simulation models for evaluating the cost-  
effectiveness of various replenishment strategies for  
operating satellite systems. The extensive use of  
computer simulation presupposes a problem complexity  
intractable to closed form or analytical solutions.  
This statement is true if analysis requires a great  
amount of detailed information. This Note  
demonstrates that there is a level of aggregation of  
the data inputs at which closed form tractability may  
be attained. Moreover, given this input aggregation  
representing failure patterns and replenishment  
strategies, the exact closed forms for approximating  
cost-effectiveness are derived. The closed form  
expressions for the cost-effectiveness of satellite  
systems are not meant to replace the large-scale  
simulation programs. The aggregate level measures  
can be most effectively employed to check the  
computer programs for internal consistency and to  
narrow the focus of acceptable inputs into the large-  
scale simulation. Proper use of the analytical  
tools presented herein can reduce the computational  
effort by significantly reducing the number of  
simulation runs necessary to identify the most  
attractive replenishment methods.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 759 14/1 5/3

TRAINING ANALYSIS AND EVALUATION GROUP (NAVY) ORLANDO FL

Incremental Costing Model for Use with the CNET Per Capita Course Costing Data Base: System I,

(U)

NOV 79 104P Swope, William M. ;  
Yelvington, Cynthia ; Corey, James M. ;  
REPT. NO. TAEG-77

UNCLASSIFIED REPORT

Availability: Document partially illegible.

DESCRIPTORS: \*Cost models, \*Cost analysis, \*Training, \*Data bases, Education, Cost effectiveness, Economic analysis, Inflation(Economics), Planning, Estimates, Resources, Scaling factors, Billets(Personnel), Requirements, Specifications, Navy  
IDENTIFIERS: Incremental costing models, Fixed costs, Variable costs

(U)

(U)

This cost model is designed to separate the fixed and variable costs of training. It is designed for use with the Per Capita Training Data Base being maintained by the Chief of Naval Education and Training. The model will estimate the change in total costs as a function of the change in training load, the operation or planning period resource characteristics and current utilization rate of training resources. The model includes a number of user defined options, including options for adjusting the revised average total cost for scale effects and for inflation. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 666 9/5 20/12

RCA SOLID STATE DIV SOMERVILLE NJ

Phase II Final Development Report for High-Reliability, Low-Cost Integrated Circuits.

(U)

DESCRIPTIVE NOTE: Final rept. 3 Feb 77-22 May 79.

MAY 79 122P

CONTRACT: N00039-76-C-0240

PROJ: F54586

TASK: XF54586002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Phase I. AD-A039 954.

DESCRIPTORS: \*Integrated circuits, \*Complementary metal oxide semiconductors, Shift registers, Operational amplifiers, Transistor transistor logic, Silicon nitrides, Schottky barrier devices, Nand gates, Low costs, High reliability, Chips(Electronics), Bonding, Wafers, Passivity, Copper, Gold, Fabrication, Manufacturing, Automation  
IDENTIFIERS: Beam tape bonding, Lead bonds, Automated assembly system, Sealed chip processing, Bonding tapes, Lead frames, Plastic packages, Ceramic packages, Gold bumps, PE62762N

(U)

(U)

The objectives of Phase II of this investigation were to fabricate significant quantities of eight integrated circuit types using the techniques defined in Phase I (see Phase I Final Development Report for High Reliability, Low Cost Integrated Circuits), perform a preliminary reliability investigation, and formulate comparative cost data. Wafers and finished devices were processed for eight integrated-circuit types. These types included three TTL circuits (5420, 5472, 5470), one Schottky TTL circuit (54S20), three CMOS circuits (CD4012B, CD4014A, CD4027A) and one linear circuit (CA741). The preliminary reliability investigations defined potential reliability problems, which were subsequently successfully resolved, and provided preliminary data regarding activation energies and failure rates.

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AD-A081 666



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 604

9/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Complexity as a Factor of Quality and Cost in  
Large Scale Software Development.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
DEC 79 98P Harris, Joe Newton ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programs, \*Research  
management, Quality, Cost estimates, History,  
Systems analysis, Models, Graphs, Management  
planning and control, Systems management, Test  
methods, Allocations, Resources, Theses  
IDENTIFIERS: Software development, Complex  
programming, Computer models, Large scale  
systems

(U)

(U)

The impact of complexity on software quality and  
costs is examined. Historic and current issues  
relating to complexity in the software development  
and software cost estimation processes are reviewed.  
Select complexity models and metrics are described  
and briefly analyzed. Finally, an argument is  
presented in support of McCabe's Directed  
Graph Model as a useful software management tool  
in controlling complexity, formulating a test  
strategy and allocating resources. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 513

15/5

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5/9

ASSESSMENT GROUP SANTA MONICA CA

Manpower/Hardware Life Cycle Cost  
Analysis Study.

(U)

DESCRIPTIVE NOTE: Rept. for Oct 77-Dec 78.  
NOV 79 495P York, Francine Y. ; Butler,  
Robert A. ; Eskew, Henry L. ;  
CONTRACT: N00014-77-C-0809

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with  
Administrative Sciences Corp., Alexandria, VA.  
Contract N00014-77-C-0811.

DESCRIPTORS: \*Acquisition, \*Naval procurement,  
\*Life cycle costs, \*Weapon systems, Manpower,  
Cost models, Naval personnel, Naval training

(U)

The Manpower/Hardware Life Cycle Cost  
(LCC) Analysis Study was conducted to analyze  
life cycle cost models and methods, with particular  
emphasis on Manpower, Personnel and Training  
Support (MP&TS) costs, and their contribution to  
total system economic costs over the life cycle of a  
weapon system. The study's principal objective was  
to examine the Weapon System Acquisition  
Process (WASP) to determine when manpower/  
hardware tradeoffs should be made, the level of  
detail necessary, and specifications for the MP&TS  
LCC model necessary to perform the analysis.  
Existing Navy MP&TS cost models are examined to  
determine their ability to accurately reflect the  
economic cost of military manpower relevant for  
tradeoff decisions. Several hardware costing  
techniques are also reviewed to determine their  
usefulness for conducting hardware/manpower cost  
tradeoff analyses. The report makes specific  
recommendations and proposes guidelines for the  
development of cost models and techniques that  
facilitate hardware/manpower tradeoff analysis.  
(Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 492 15/5

FLORIDA UNIV GAINESVILLE DEPT OF INDUSTRIAL AND SYSTEMS  
ENGINEERING

Production Lot Sizing with Material  
Handling Cost Considerations.

(U)

DESCRIPTIVE NOTE: Research rept.,  
DEC 79 31P Hodgson, T. J. ;Lowe, T.  
J. ;

REPT. NO. RR-79-7  
CONTRACT: N00014-76-C-0096

UNCLASSIFIED REPORT

DESCRIPTORS: \*Industrial production, \*Storage,  
Materials handling, Warehouses, Automatic,  
Allocations, Cranes, Travel, Costs,  
Optimization, Mathematical models, Computer  
programming  
IDENTIFIERS: Lot sizing, AS14D,  
PE61102A

(U)

(U)

The determination of production lot sizes and the  
assignment of storage space in a warehouse for the  
produced items are usually treated as two separate  
problems: The former providing input (space needed)  
to the latter. In this paper, we treat the decision  
problems as one with the objective of minimizing  
total setup, inventory carrying, and warehouse  
material handling cost. We treat the minimum  
material handling cost as a continuous function of  
the lot sizes and develop an algorithm for finding  
locally optimal solutions of the derived optimization  
problem. Computational experience is provided and  
applications to automated warehousing systems are  
discussed. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 146 5/1 13/10

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Rate Stabilization and Its Impact on U.  
S. Naval Shipyards.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 79 43P Walters, Melville Joseph .  
III:

UNCLASSIFIED REPORT

DESCRIPTORS: \*Management planning and control.  
\*Costs, Rates, Allocations, Stabilization,  
Shipyards, Naval shore facilities, Job analysis,  
Theses  
IDENTIFIERS: Rate stabilization

(U)

(U)

The eight United States Naval Shipyards  
commenced operation under the rate stabilization  
concept in 1976. Rate stabilization refers to the  
use of annually predetermined rates for the billing  
of customers for work accomplished in the shipyard.  
A primary objective of rate stabilization was to  
provide improved planning and budgeting to the  
customer and the shipyard. The objective of this  
thesis was to assess the impact of rate stabilization  
on the U.S. Naval Shipyards. Conclusions  
are that the overall operational, planning and  
programming advantages provided by rate stabilization  
more than offset the disadvantages. Indications are  
that the concept of rate stabilization is working and  
that the shipyards are learning to work within the  
program. It is important that, once stabilized  
rates have been set, major changes in workload at the  
individual shipyards do not occur. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A081 072 9/2

MCDONNELL DOUGLAS ASTRONAUTICS CO-ST LOUIS MO

Low-cost Computer-Aided Instruction/  
Computer-Managed Instruction (CAI/CMI)  
System: Feasibility Study.

(U)

DESCRIPTIVE NOTE: Final report.

DEC 79 152P

Lutz, Larry M. ; Tate,

Thompson ; Pfisterer, David C. ; Nix, C. Jerome

; Klen, Thomas G. ;

CONTRACT: F33615-78-C-0031

PROJ: 1121

TASK: 02

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer aided instruction, \*Computer  
programs, \*Low costs, Programming languages,  
Management training, Teaching methods,  
Supervisors, Air Force training, Computers,  
Area coverage, Feasibility studies, Functions,  
Surveys

IDENTIFIERS: CMI (Computer Managed Instruction),  
Technical training, WUAFHRL11210228,  
PE62205F

(U)

(U)

This study investigated the feasibility of a low-cost computer-aided instruction/computer-managed instruction (CAI/CMI) system. Air Force instructors and training supervisors were surveyed, to determine the potential payoffs of various CAI and CMI functions. Results indicated that a wide range of capabilities had potential for resident technical training. Surveys of selected computers, terminals, communications, and support software identified candidates for the low cost system.

(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 962 1/3 14/1 13/8

BATTELLE COLUMBUS LABS OH

Briefing on Manufacturing Technology (MT)  
Cost Driver Analysis Program to Naval Air  
Systems Command, Department of the Navy,  
Washington, D.C..

(U)

JUN 79 204P

Noton, Bryan R. ;

CONTRACT: DLA900-78-C-1715

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft, \*Life cycle costs,  
\*Manufacturing, \*Cost analysis, Costs,  
Reduction, Airframes, Aircraft engines, Systems  
engineering

(U)

IDENTIFIERS: Cost drivers

(U)

This study is in response to the urgent need to reduce manufacturing costs of aircraft systems. The subsystems studied were airframes; engines; mechanical and hydraulic systems; and crew systems. This study was only concerned with cost drivers in the manufacture of components in aerospace companies, i.e., acquisition costs. The objectives of this manufacturing technology (MT) cost-driver analysis program were to: identify cost drivers in Navy aircraft manufacture, identify cost driver commonality, and provide a basic framework for evaluating manufacturing technology (MT) projects. General conclusions from this study are that we must accelerate our efforts to change the emphasis from only performance to affordable performance. Spiraling aircraft costs must be better controlled. It was also concluded that many costs drivers are designed into aircraft. Further conclusions related to MT are minimum new MT has been introduced into production in the past 10 years, most MT cost drivers are common to all subsystem, MT projects should be selected that provide a high return-on-investment (ROI), emerging MT still displays significant cost drivers, MT should be developed and proven acceptable before introduction into production, and developing MT on a production program is seldom cost effective.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 945 17/7 14/1

ARINC RESEARCH CORP ANNAPOLIS MD

Avionics Cost Development for Civil  
Application of Global Positioning System. (U)

DESCRIPTIVE NOTE: Final rept.,

APR 79 97P Kowalski, S. H. :

REPT. NO. 1326-01-7-1873

CONTRACT: DDT-FA76WA-3788

MONITOR: FAA-EM 79-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Global positioning system. \*Cost  
estimates. Cost analysis. Avionics. Systems  
analysis. Civil aviation. Procurement. Electronic  
equipment. Parts. Tables(Data). Methodology.  
Computations (U)

This report presents the results of the cost analysis of avionics required in support of the civil application of the Global Positioning System (GPS). The design considered for analysis was chosen because of the advanced state of development which provided the necessary data for cost evaluations. The costs of avionics were developed using both the parametric and accounting methods of cost estimating. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 930 21/5 1/3 14/1

RAND CORP SANTA MONICA CA

An Approach to the Life-Cycle Analysis of  
Aircraft Turbine Engines. (U)

DESCRIPTIVE NOTE: Interim rept.,

DEC 79 C2P Nelson, J. R. :

REPT. NO. RAND/N-1337-AF

CONTRACT: F49620-77-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Rept. no. R-2103-AF  
dated Nov 77. AD-A050 349 and Rept. no. RAND/R-  
2391-AF dated Apr 79. AD-A069 282.DESCRIPTORS: \*Gas turbines \*Aircraft engines.  
\*Life cycle costs. Cost analysis. Cost  
effectiveness. Methodology. Jet fighters.  
Monitoring. Forecasting (U)

A paper prepared for the AGARD/NATO Lecture Series. 'The Application of Design to Cost and Life-Cycle Cost to Aircraft Engines.' scheduled for May 1980. A methodology is described for life-cycle analysis of aircraft turbine engines from historical data. The methodology enables the weapon-system planner to acquire early visibility of cost magnitudes, proportions, and trends associated with a new military engine's life cycle, and to identify 'drivers' that increase cost and can lower capability. The methodology is applied at the engine subsystem and aircraft system levels for a military fighter aircraft to demonstrate that decisions about engine performance/schedule/cost must be made at the system level. Commercial considerations are discussed, as is limited historical experience in engine monitoring, an approach to obtaining the necessary information and procedures for performance and cost feedback to the engine designer. This Note presents portions of previously published Rand work on life-cycle analysis of aircraft turbine engines and engine monitoring systems, together with some recent unpublished work applying the earlier efforts at the aircraft system level. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A080 808 17/1 9/2

RCA GOVERNMENT COMMUNICATIONS SYSTEMS SOMERVILLE N J  
ADVANCED COMMUNICATIONS LAB

Low Cost, Low Power Dissipation Micro-  
Signal Processor for Acoustic Signal  
Processing.

(U)

DESCRIPTIVE NOTE: Final rept.,  
DEC 79 23P Hampel, D. ; Bradshaw, J. L.  
; Prost, K. J. ;  
CONTRACT: N00014-78-C-0776  
PROJ: F11121  
TASK: RF11121801

UNCLASSIFIED REPORT

DESCRIPTORS: \*Sonar sound analyzers, \*Signal  
processing, \*Processing equipment, \*Microprocessors,  
\*Fast fourier transforms, \*Acoustic signals,  
Complementary metal oxide semiconductors, Computer  
programs, Monolithic structures(Electronics),  
Analog to digital converters, Low costs, Low  
power, Deployment, Capacitors (U)  
IDENTIFIERS: 1802 Microprocessors, Multipliers,  
Switched capacitors, PE62711N (U)

A low cost, low power dissipation micro-signal  
processor has been designed and built for application  
to deployed sensors. Using latest technology,  
state-of-the-art components, this microprocessor  
based system has been programmed, and demonstrated in  
performing 1024 point fast Fourier transforms  
(FFT's) on 8-bit input within one second, as well  
as a variety of associated data acquisition and  
control functions. All necessary functions for a  
self-contained, stand alone acoustic processor were  
incorporated in a 410 cu. cm. feasibility brassboard,  
dissipating an average of 50 mw. All essential  
components were either CMOS or CMOS/SOS,  
including the standard commercially available 1802  
microprocessor, and, a special LSI multiplier  
required for expediting the computations needed for  
the FFT. Major hardware and software issues are  
discussed, followed by an exposition of emerging  
technology IC's, leading to even smaller, lower  
cost, lower power dissipation processors.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A080 652 5/3

GENERAL ACCOUNTING OFFICE WASHINGTON DC PROCUREMENT AND  
SYSTEMS ACQUISITION DIV

Financial Status of Major Federal  
Acquisitions, September 30, 1979.

(U)

FEB 80 115P

REPT. NO. GAO/PSAD-80-25

UNCLASSIFIED REPORT

Availability: U.S. General Accounting Office,  
Distribution Section, Room 1518, 441 G. St.,  
N.W., Washington, DC 20548. (No copies furnished by  
DTIC/NTIS). Document partially illegible.  
SUPPLEMENTARY NOTE: Report to the Congress.

DESCRIPTORS: \*Costs, Inflation(Economics),  
Acquisition, Government procurement, Weapon  
systems, Federal budgets, Tables(Data)

(U)

This report concerns the financial status of major  
acquisitions of the U.S. Government, including  
acquisitions financed solely with Federal funds and  
those financed jointly with Federal, State, and  
other funds. Because of the numerous projects  
involved, we obtained explanations for cost growth  
only for those weapon systems included on selected  
acquisition reports of the Department of Defense  
and for other projects having cost increases of 100  
percent or more. Inflation, engineering, and  
quantity changes were identified as the major causes  
of cost growth. Sixty-four projects, estimated to  
cost \$16.5 billion, have been in process more than 20  
years. Seven are more than 50 years old. The  
Congress may want to review these older projects to  
see if they are progressing satisfactorily.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 518 1/3 13/9

ARMY AVIATION RESEARCH AND DEVELOPMENT COMMAND ST LOUIS MO

Cost Analysis of a Helicopter Transmission and Drive Train.

(U)

DESCRIPTIVE NOTE: Technical memo..

NOV 79 46P Mulliken, Richard F. :

REPT. NO. USAAVRADCOM-TM-80-D-2

PROJ: 1L162209AH76

TASK: 00

UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Transmissions(Mechanical), \*Drives, \*cost analysis, Tail rotors, Gears, Mechanical components, Costs, Engineering drawings

IDENTIFIERS: \*Drive trains, PE62209A, ASH76, WU248

A cost analysis was conducted on a transmission and drive train system from a single-engine helicopter with an input of 1134 hp at 6600 rpm. Main rotor speed was 325 rpm. Details and subassemblies of this system were identified using the Army Technical Manual. Prices of spare parts were obtained from the Army Master Data File (AMDF). Irregularity in the prices found showed that it was impossible to identify specific cost drivers or to develop any valide cost baseline or to obtain valid comparative detail costs using this data base. In view of this situation, plans to analyze a second sytem were abandoned. A detailed review of the data obtained strongly indicated that gears, forgings, and castings are the cost drivers in this system. Since all such systems employ components of similar nature and function, this indication is applicable to other transmission systems and should therefore be useful as an aid in directing cost-reduction efforts. Manufacturing approaches by which costs on such parts may be reduced are suggested. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 196 12/2 15/5

LOGISTICS MANAGEMENT INST WASHINGTON DC

Statistical Risk Properties of the Logistic Support Cost Commitment.

(U)

DEC 79 121P Collins, Dwight E. :

REPT. NO. LMI-WL900

CONTRACT: MDA903-77-C-0370

UNCLASSIFIED REPORT

DESCRIPTORS: \*Logistics support, \*Cost estimates, \*Operations research, Risk, Statistical analysis, Costs, Reliability, Design to cost, Life cycle costs, Cost models

(U)

In recent years, several new contractual arrangements have been devised to estimate, target, and track logistic support costs during the acquisition phase. One of these is a contractual mechanism known as a Logistic Support Cost Commitment (LSCC), sometimes referred to as a Support Cost Guarantee. The objective of the LSCC is to motivate the contractor to design his equipment to have reduced logistic support costs through increased reliability and maintainability (R&M) when fielded. This report documents research into the statistical properties of the LSCC. The LSCC utilizes one of a broad class of statistical estimators, which are complex mathematical functions of simpler estimators whose statistical properties are well known. In the LSCC case, the complex estimator is a cost function, and incorporates such simpler estimators as rates of occurrence, durations of activity, and physical distribution of activity. It also includes constant cost rates. The research documented is primarily mathematical. It does not treat in-depth the numerous qualitative issues regarding LSCC use.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 130 1/3 14/1 20/1

NOAH (J WATSON) INC FALLS CHURCH VA

Costs and Benefits of Requiring New  
Production of Older Aircraft Types to Meet  
Amended Noise Standards.

(U)

DESCRIPTIVE NOTE: Final rept..

SEP 79 75P Day.C. F. ;Studholme.E.

D. ;

CONTRACT: DOT-FA78WA-4192

MONITOR: FAA/EE 79-22

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Includes errata sheet dated 10 Jan 80.

DESCRIPTORS: \*Industrial production, \*Jet engine noise, \*Costs, Jet transport planes, Standards, Benefits, Operation

(U)

This report examines costs and benefits associated with requiring new production of older aircraft models to meet amended noise standards. Two cases are examined: (1) all aircraft produced after 1983 must meet a noise standard halfway between Stage 2 and Stage 3 limits; and (2) all aircraft produced after 1985 must meet Stage 3 noise standards. The cost elements are combined and expressed as a change in direct operating costs in either cost-per-passenger mile or cost-per-aircraft mile, as appropriate. Noise benefits are estimated in terms of the change in area under a 100 EPNL contour resulting from the amended standards. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 110 1/2

ARMY SAFETY CENTER FORT RUCKER AL

Survey of Forced and Precautionary Landing Costs.

(U)

DESCRIPTIVE NOTE: Technical rept..

JUL 79 24P Spezia.Emil ;KimeI.G. D. ;

Neese.Thomas ;

REPT. NO. USASC-TR-79-4

UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft landings, Surveys, Questionnaires, Costs, Cost analysis

(U)

IDENTIFIERS: \*Forced landings

(U)

A questionnaire survey was conducted to learn the costs of forced landings (F/Ls) and precautionary landings (P/Ls). The questionnaire elicited cost data in respect to (1) the effect each mishap had on the mission assigned the mishap aircraft, (2) man-hours lost by the crew and passengers, (3) man-hours required to recover the crew, passengers, and aircraft, (4) time the mishap aircraft was unavailable for flight, (5) man-hours required to make the aircraft flyable, and (6) the components that malfunctioned to cause these mishaps. The broad and obscure costs revealed by the survey are sufficient to justify the initiation of a concerted effort to prevent the causes of these mishaps. Prevention of the causes of these mishaps will allow aviation units to operate more efficiently, i.e., allow them to maintain a higher state of combat readiness. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A080 089 5/1 5/3

ANALYTIC SCIENCES CORP ARLINGTON VA

Modeling Navy Ship Acquisition. (U)

DESCRIPTIVE NOTE: Final rept. on Phase 2, part 1,  
 DEC 79 73P Towle, William J.; Moore,  
 David H.; O'Brien, Mike J.;  
 REPT. NO. TASC-TR-1337-2  
 CONTRACT: N00014-78-C-0436

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval procurement, \*Cost models,  
 Algorithms, Computerized simulation, Naval  
 vessels, Shipbuilding, Allocations, Contract  
 administration, Naval planning, Shipyards,  
 Productivity, Market research, Lagrangian  
 functions, Inflation (Economics), Data bases,  
 Computer programming (U)

During the first phase of this contract, TASC performed a preliminary analysis of the cost and feasibility of developing a model to aid in achieving an efficient work load distribution in the shipbuilding industry through competitive allocation. This included a detailed investigation of the planning and procurement methods currently used by the Navy as well as considering the feasibility of developing an analytic tool to aid the Navy in achieving an efficient work load distribution in the shipbuilding industry. The present study provides continuing background analyses to refine the equation set, to improve the validity of the analytic approach, and to demonstrate the feasibility of the data requirement for the model. Background analyses were performed on: (1) The extent of planning problems which result from government furnished equipment, subcontracts and material; (2) The influence of government procurement strategy and contract form on the price and competitive relationships; and (3) The importance of commercial production and repair and conversion with a view to proper incorporation of these effects in the model for Navy planning purposes; and (4) Competition in the industry. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A079 804 14/1 1/3 15/5

GENERAL ACCOUNTING OFFICE WASHINGTON DC PROCUREMENT AND  
SYSTEMS ACQUISITION DIV

The Air Force Should Recover Excess  
 Costs of Prior F-15 Contracts and Take  
 Action to Save Costs on Future F-15  
 Contracts. (U)

OCT 79 31P  
 REPT. NO. GAO/PSAD-80-4

## UNCLASSIFIED REPORT

Availability: U.S. General Accounting Office,  
 Distribution Section, Room 1518, 441 G. St.  
 Washington, DC 20548 (No copies furnished by  
 DTIC).

DESCRIPTORS: \*Cost overruns, \*Cost analysis,  
 Profits, Contracts, Aircraft equipment, Air  
 Force procurement, Cost effectiveness, Jet  
 fighters (U)

IDENTIFIERS: Production materials, F-15  
 aircraft (U)

In reviewing production material costs proposed by the McDonnell Douglas Corporation, St. Louis, Missouri, we found that the target cost of contract F33657-77-C-0200 is overstated by about \$2.4 million because the contractor did not use current, accurate, and complete cost or pricing data to negotiate production material costs. Also, since the contractor's profit was added to this overstatement, about \$2.7 million excess cost to the Government will result. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A079 580 14/1

GENERAL ACCOUNTING OFFICE WASHINGTON DC FEDERAL PERSONNEL  
AND COMPENSATION DIVDefense Use of Military Personnel In  
Industrial Facilities. Largely Unnecessary  
and Very Expensive. (U)MAY 79 47P  
REPT. NO. GAO/FPCD-79-10

## UNCLASSIFIED REPORT

Availability: U.S. General Accounting Office,  
Distribution Section, Room 1518, 441 G Street,  
NW, Washington, DC 20548 (No copies furnished by  
DTIC).SUPPLEMENTARY NOTE: See also Rept. no. FPCD-76-7.  
DESCRIPTORS: \*Job analysis, \*Cost analysis,  
Industries, Military personnel, Industrial plants,  
Comparison, Department of Defense, Civilian  
personnel (U)

In April 1976 a report 'Maintaining a  
Military Presence in an Industrial  
Environment,' was issued. That report, a case  
study of military staffing at the Naval Weapons  
Support Center, Crane, Indiana (Crane),  
pointed out the cost savings and other advantages of  
using civilians instead of military personnel in an  
industrial environment. It also pointed out that  
the Department of Defense (DOD) operates a  
large number of other commercial and industrial  
military support activities. The report estimated  
that about 10,000 military personnel were assigned to  
such activities even though the work forces were  
predominantly civilian. In view of the findings at  
Crane, it is recommended that the Secretary of  
Defense correct the situation and review all other  
such activities for potential reduction of military  
personnel. (U)

AD-A079 580

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A079 495 1/5 9/2

YANG (NAI C) AND ASSOCIATES NEW YORK

Nondestructive Evaluation of Airport  
Pavements. Volume II. Operation Manual for  
PAVBEN Program at TCC. (U)DESCRIPTIVE NOTE: Final rept..  
SEP 79 124P Yang, David :  
CONTRACT: DOT-FA77WA-3964  
MONITOR: FAA-RD 78-154-2

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
SUPPLEMENTARY NOTE: See also Volume 3. AD-A079  
591.DESCRIPTORS: \*Pavements, \*Runways, \*Computerized  
simulation, Cost analysis, Benefits, Computer  
programs, Input, Output, Subroutines,  
Programming manuals (U)  
IDENTIFIERS: PAVBEN computer program, Cost benefit  
analysis (U)

Cost/benefit analysis of alternative pavement  
design is the primary goal of the PAVBEN program at  
the Transportation Computer Center (TCC) in  
Washington, D.C. The integrated system is  
data independent based on defined mathematical models  
and operation logic. The program is written in a  
high level language FORTRAN IV. The job inputs  
consist of: (1) NDT field data; (2) types of  
existing pavements; (3) facility classifications; (4)  
demand forecast; and (5) local cost values. The  
default system contains all design data for: (1) 15  
air transports; (2) 9 FAA regional cost values; (3)  
8 types of pavement design; (4) 22 layer components;  
(5) 20 types of existing pavement; and (6) universal  
mechanistic design model. The major outputs will  
be: (1) NDT inventory file; (2) present functional  
life; (3) computed engineering data; (4) pavement  
thickness and cost data; and (5) cost/benefit  
analysis for four new pavements, three overlays and  
three keel constructions. The operation of PAVBEN  
program involves extensive use of data storage,  
filing technique and computed data inputs. The  
current operation program and this manual are  
prepared for the execution on computer hardware  
system at TCC. (U)

AD-A079 495

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A079 293 1/3 20/4

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
NEUILLY-SUR-SEINE (FRANCE)

Low Cost Aircraft Flutter Clearance. (U)

DESCRIPTIVE NOTE: Conference proceedings.

SEP 79 115P

REPT. NO. AGARD-CP-278

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Meeting of the  
Structures and Materials Panel (48th), 4 Apr 79,  
Williamsburg, VA.DESCRIPTORS: \*Aircraft, \*Flutter, Low costs,  
Lightweight, Gliders, Remotely piloted vehicles,  
Requirements, Vibration, Degrees of freedom,  
Stability, Test methods, Velocity, Wings (U)  
IDENTIFIERS: Light aircraft (U)

Light aircraft and gliders are constructed by small manufacturers who do not have the manpower or financial resources to evaluate flutter safety with the costly modern sophisticated test and analysis techniques available to large companies. Future low cost reconnaissance, liaison, RPV and other military aircraft could be designed and built by such small aircraft manufacturers. This Specialists Meeting was therefore held to evaluate the usage of low cost aircraft flutter clearance procedures. Some results occurring from such procedures (weight efficiency, safety, flight incidents, and overall costs) were discussed relative to those from methods using advanced state-of-the-art. The relative technological-financial position of the small lightweight aircraft manufacturer was also discussed. The difficulties that still exist and the progress to be expected in the next few years were exposed. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A079 038 1/3 14/1 15/7 9/2

DIRECTORATE OF AEROSPACE STUDIES KIRTLAND AFB N MEX

COEFUV: A Computer Implementation of a  
Generalized Unmanned Vehicle Cost Model. (U)

DESCRIPTIVE NOTE: Final rept..

OCT 78 78P Bomber .Thomas M. :Feuchter.

Christopher A. :  
REPT. NO. DAS-TR-78-4

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Remotely piloted vehicles, \*Costs,  
\*Cost effectiveness, \*Computerized simulation,  
Unmanned, Models, Computer programs, Input, (U)  
Output, Tactical warfare  
IDENTIFIERS: COEFUV(Cost Effectiveness of (U)  
Unmanned Vehicles)

This document summarizes a method of determining the cost and cost effectiveness of ground-launched, recoverable unmanned airborne vehicle (e.g., remotely piloted vehicle) operations in a tactical environment. The inputs and outputs of a computer code implementing the methodology are described in detail and a listing of the code is presented. (U)  
(Author)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 793 14/1 9/2

AIR FORCE AVIONICS LAB WRIGHT-PATTERSON AFB OH

Application of the RCA PRICE-S Software Cost Estimation Model to Air Force Avionics Laboratory Programs. Revision.

(U)

DESCRIPTIVE NOTE: Final technical rept. Jan 78-Jul 79.

OCT 79 51P James, Thomas G. , Jr. ;

Ferens, Daniel V. ;

REPT. NO. AFAL-TR-79-1164

PROJ: 2003, 6095

TASK: 09, 15

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of Rept. no. AFAL-TM-78-25.

DESCRIPTORS: \*Cost models, \*Computer program verification, \*Avionics, Computer programs, Cost effectiveness, Life cycle costs, Configuration management, Simulators

(U)

IDENTIFIERS: Price-S software cost estimate model, WUAFAL60951502, PE62204F, WUAFAL20030902

(U)

This report covers work conducted in-house by the System Evaluation Group (AAA-3), Avionic Systems Engineering Branch, Air Force Avionics Laboratory, Wright-Patterson AFB, Ohio 45433. This work was a calibration and validation of the proprietary RCA Corporation PRICE-S software development cost model to four AFAL software programs. The results of the study are that PRICE-S appears to work well for Air Force Avionics Laboratory programs and more validation/calibration studies should be done. (Author)

(U)

AD-A078 793

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 656 14/1 9/2

ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND IL  
DECISION MODELS DIRECTORATE

Venture Evaluation and Review Technique (VERT). Users'/Analysts' Manual.

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 79 100P Moeller, Gerald ;

REPT. NO. DRSAR-DM-T905

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models, \*Computerized simulation, \*Programming manuals, \*Decision Making, \*Linear programming, Adaptive systems, Symbols, Networks, Monitors

(U)

IDENTIFIERS: VERT(Venture evaluation and Review Technique), Risk analysis, Schedule risks, Performance risks, Users manuals, Capital requirements, Venture evaluation

(U)

This Users'/Analysts' Manual provides information in sufficient detail to permit installation and application of the VENTURE EVALUATION AND REVIEW TECHNIQUE (VERT). VERT is a computerized, mathematical oriented simulation network technique designed to model decision environments under risk. Historically, VERT has been used principally to assess the risks involved in the undertaking of a new venture, as well as in the estimation of future capital requirements, control monitoring, and overall evaluation of on-going projects, programs, and systems. Modeling is accomplished with a small set of easily comprehended operators which readily facilitates the structuring of a symbolic pictorial network layout of the system under study. VERT is an adaptive tool, thereby allowing the scope and level of abstraction to rest almost entirely in the hands of the analyst. Thus, modeling can be accomplished on a one-for-one basis, whereby one real world event and activity is correspondingly represented symbolically as one event and activity in the VERT network; or, modeling can also be accomplished on a compressive basis whereby a multitude of real world events and activities are compressed into the symbolic representation of a few events and activities in the VERT network. (Author)

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AD-A078 656

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 298 5/1 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF ENGINEERING

Aircraft Airframe Cost Estimation Using a Random Coefficients Model.

(U)

DESCRIPTIVE NOTE: Master's thesis.

DEC 79 65P Hinch, James H. ;

REPT. NO. AFIT/GOR/SM/79D-4

UNCLASSIFIED REPORT

DESCRIPTORS: \*Airframes, \*Cost estimates, Mathematical models, Mathematical prediction, Learning curves, Coefficients, Random variables, Parametric analysis, Theses

IDENTIFIERS: Random coefficients models

(U)

(U)

Previous studies into aircraft airframe acquisition costs have either not dealt with the learning phenomenon or have assumed that the learning curve slope is the same for all types of aircraft. However, some results have indicated that this is not truly the case. The random coefficients model, as applied in this study, provides a framework in which the slopes can differ by estimating their values based on other characteristics of the aircraft. This method thus has the advantage over other techniques of being able to predict the actual learning curve slope more accurately before any production takes place, and thus yield more reliable cost estimates. For that reason, it represents a significant advance in the state of the art of parametric airframe cost estimation. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 279 5/3 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Pricing for U.S. Army Technical Assistance Field Teams (TAFT).

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 79 55P Brown, Terry E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military assistance, \*Finance, \*Cost estimates, Foreign, Policies, Accounting, Teams(Personnel), Army personnel, Deployment, Overseas, Military dependents, Relocation, Field army, Theses

(U)

IDENTIFIERS: \*Pricing, Foreign military sales,

TAFT(Technical Assistance Field Teams)

(U)

The Technical Assistance Field Team (TAFT) concept is a relatively new method of providing military services to foreign countries under the Foreign Military Sales (FMS) program. Because of this newness, the policies and procedures governing the deployment of an U.S. Army TAFT are still being formulated and revised. One such area is pricing. This document provides a brief overview of FMS, including the purposes, authority, and responsibilities for its administration. The authorized usage and pricing involved in the deployment of an U.S. Army TAFT are discussed. This study attempts to consolidate and/or provide methods that may be used to price TAFT deployments. Because of the lack of sufficient data in several areas, the pricing methods discussed are conservatively biased. Recommendations are presented to refine further the price estimation methods discussed. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 272 5/1 5/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

The Cost of Money on Assets Under Construction and Defense Contracting.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 79 74P Pittman, Glenn James ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Accounting. Cost analysis.  
Construction. Contracts. Costs. Department of  
Defense. Allocations. Theses  
IDENTIFIERS: Capitalization

(U)  
(U)

On May 5, 1978, the Cost Accounting Standards Board issued a proposal containing two possible alternatives for the allocation of the cost of money associated with assets under construction. Alternative A would require capitalization while Alternative B would modify a current standard to include the interest on construction. This thesis examines the nature of the commitment by a sample of government contractors to construction-in-progress and the interest cost associated with this level of investment. It then examines and evaluates the cost streams associated with each of the alternatives and a hypothetical asset under construction account. It was determined that by using present value, and at reasonable discount rates, the differences between the two alternatives could be considered immaterial. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 232 5/1 15/3

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM ANALYSIS DIV

The Effect of Price Competition on Weapon System Acquisition Costs.

(U)

DESCRIPTIVE NOTE: Final rept..  
SEP 79 252P Daly, George G. ; Gates, Howard P. ; Schuttinco, James A. ;  
REPT. NO. IDA-P-1435  
CONTRACT: WDA903-79-C-0202  
MONITOR: IDA/HQ.5B1E 79-21585.AD-I 100 109

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement. \*Weapon systems.  
\*Cost analysis. \*Costs. Acquisition. Policies.  
Life cycle costs. Savings. Cost estimates.  
Contract administration. Technology transfer  
IDENTIFIERS: \*Prices. \*Competition. LPA-DARPA-T-154

(U)

(U)

This paper examines the impact of price competition on weapon systems acquisition. The multidimensional impact of competition on price and non-price aspects of weapon system production and acquisition are discussed. The importance of cost quantity relationships for measuring the effect of competition on price and the theoretical basis of those relationships are reviewed. The problems of and the techniques for accomplishing the transfer of technology associated with competition for production contracts are briefly outlined. Previous estimates of savings due to competition are reviewed, and their underlying methodology criticized. It is proposed that the introduction of competition be analyzed as an investment. The eventual reductions in procurement costs must be balanced against the initial costs of introducing competition and establishing a second source. The opportunity cost of government funds should be incorporated by calculating the net discounted present value on the rate of return of introducing competition for the procurement of a particular system. Finally, conclusions and policy recommendations are presented, based upon both empirical analyses and qualitative findings from interviews. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 155 14/1 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Costs and Decision-Making Processes in Non-Profit, General-Purpose Hospitals.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 79 169P Todd, Hamilton Smith, Jr. ;  
Rice, Stephen Charles ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Management planning and control, Decision making, Control, Costs, Hospitals, Physicians, Management, Health surveys, Theses

(U)

IDENTIFIERS: Cost control, General-purpose hospitals

(U)

A literature survey was conducted on the relationship between hospital costs and decision-making processes. Costs are seen as consequences of decisions made by four groups within the hospital setting: (1) board of trustees; (2) administrator; (3) medical director; and (4) medical staff. These sets of organizational players are studied in terms of functions and responsibilities, compatibility in a professional bureaucracy, powers and influences, and goals. Attempts are made to discern what kinds of decisions are made by each group and what impact those decisions will have on costs. The authors conclude that cost control mechanisms can focus on either resource availability or resource utilization. The former is seen as multi-influenced while the latter is essentially controlled by physicians. An argument is made for the need to internalize cost information into the physician's clinical judgements.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 053 14/1

WESTINGHOUSE ELECTRIC CORP HUNT VALLEY MD

Predictive Operations and Maintenance Cost Model. Volume II.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 78-Jun 79.

AUG 79 377P Feltus, Erasmus E. ;  
CONTRACT: F33615-77-C-1105

PROJ: 2003

TASK: 09

MONITOR: AFAL TR-79-1120-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A078 052 and AD-A059 164, AD-A059 516 and AD-A059 354.

DESCRIPTORS: \*Cost estimates, \*Cost models, Statistical analysis, Regression analysis, Life cycle costs, Air Force equipment, Avionics, Data bases

(U)

IDENTIFIERS: LRU(Line Replaceable Units),  
WUAFAL20030912, PE62204F

(U)

This report describes a model which can be used to estimate the operations and support costs of avionics line replaceable units (LRU's). The model relates available LRU design parameters to operations and support costs using various cost estimating relationships. This document is Volume II of the final report which describes the development of the revised version of the Westinghouse Avionics Laboratory Predictive Operations and Support (ALPOS) cost model developed in 1977-1978 and described in AFAL-TR-78-49. This revised version, known as ALPOS II, has a more expansive data base than ALPOS and includes digital avionics s, items not included in ALPOS.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 052 14/1 12/1 5/1

WESTINGHOUSE ELECTRIC CORP HUNT VALLEY MD

Predictive Operations and Maintenance Cost Model. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 78-Jun 79, AUG 79 282P Wienecke, E. Louis, III ; Feltus, Erasmus E. ;

CONTRACT: F33615-77-C-1105

PROJ: 2003

TASK: '09

MONITOR: AFAL TR-79-1120-VOL-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A078 053 and AD-A059 164, AD-A059 516 and AD-A059 354.

DESCRIPTORS: \*Cost estimates, \*Cost models, \*Predictions, \*Statistical analysis, Life cycle costs, Logistics support, Avionics, Operation, Maintenance, Experimental design, Data acquisition, Data bases, Regression analysis, Validation, Replacement

IDENTIFIERS: WUAFAL20030912, PE62204F

(U)

(U)

This report describes a model which can be used to estimate the operations and support costs of avionics line replaceable units (LRU's). The model relates available LRU design parameters to operations and support costs using various cost estimating relationships. This document is Volume I of the final report which describes the development of the revised version of the Westinghouse Avionics Laboratory Predictive Operations and Support (ALPDS) cost model developed in 1977-1978 and described in AFAL-TR-78-49. This revised version, known as ALPDS II, has more expansive data base than ALPDS and includes digital avionics systems not included in ALPDS.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 004 15/5 14/1

SYSTEMS CONSULTANTS INC WASHINGTON D C

Manufacturing Technology Cost Drivers Study of Aircraft Rework, Overhaul and Remanufacture Processes. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. 19 May 78-31 Jan 79.

JAN 79 121P Harkins, William D. ; CONTRACT: N00244-78-C-0286

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval equipment, \*Maintenance, \*Cost analysis, Naval aircraft, Guided missiles, Electronic equipment, Production, Machining, Naval shore facilities

(U)

IDENTIFIERS: \*Depot level maintenance, Overhaul, Remanufacture, Cost drivers

(U)

This study covered the aircraft rework, overhaul and remanufacture processes at the six Naval Air Rework Facilities (NAVAIRREWORKFACs) and identified those processes which were most costly in the performance of organic naval air depot level maintenance. Concerned with the logistical aspects of Naval Weapons Systems and the need to increase productivity within the Naval Air Industrial Community, the study focused on application opportunities related to manufacturing processes, methods, techniques and equipment associated with manufacturing technology functional categories. For the items being reworked, those elemental or sub-elemental operations which were most costly (viz, cost drivers) were identified, ranked by aggregate cost for all NAVAIRREWORKFACs, assembled within a data base, and presented in the Final Report. Conclusions and recommendations resulting from the study are presented. (Author)

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AD-A078 052

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A077 943 5/9 19/5 16/1

ARMY RESEARCH INST FOR THE BEHAVIORAL AND SOCIAL SCIENCES  
ALEXANDRIA VAA Methodology and Analysis for Cost-Effective  
Training in the AN/TSQ-73 Missile  
Minder.

(U)

DESCRIPTIVE NOTE: Research memo..  
FEB 78 63P Jorgensen, Charles C. ;  
REPT. NO. ARI-RM-77-26  
PROJ: 2Q763743A771

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
DESCRIPTORS: \*Army training, \*Training devices,  
\*Air defense, \*Fire control systems, \*Guided  
missile personnel, Operational effectiveness, Cost  
effectiveness, Methodology, Policies, Decision  
making, Surface to air missiles  
IDENTIFIERS: AN/TSQ-73, Missile minders,  
PE63743A, A5771

(U)

(U)

The methodology presented in this paper visualizes the problem of cost effectiveness in the following ways: First, it assumes an average level training developer who may or may not be aware of the latest psychological training options available to him and who may or may not be aware of all current managerial policies that affect his choices. Second, it assumes that TRADOC and the training manager have policies which they expect to see reflected in cost and operational effectiveness analysis (COEA) decisions. Third, the COEA analyst may or may not have access to a complete Train Up Study (TUS) from which to refine his decisions. Fourth, he is probably under time pressure to supply alternate programs as training input for one component of a complete COEA analysis. Fifth, he has a limited number of support personnel.

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AD-A077 943

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A077 725 5/1 13/8 9/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICSAn Investigation of Changes in Direct Labor  
Requirements Resulting from Changes in  
Avionics Production Rate.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 79 172P Stevens, David Y. ;  
Thomerson, Jimmie ;  
REPT. NO. AFIT-LSSR-11-79A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Production rate,  
Industrial production, Resource management,  
Learning curves, Labor, Costs, Mathematical  
prediction, Computerized simulation, Hypotheses,  
Mathematical models, Linear regression analyses,  
Statistical tests, Avionics, Jet fighters,  
Military procurement, Theses  
IDENTIFIERS: Prices

(U)

(U)

This research investigated the effects on direct labor requirements by exogenous changes in production rate in the ARC 164 radio and the Computer Signal Data Converter avionics production programs. The standard learning curve model was modified by adding a production rate variable using test data from the F-4, F-102, and KC-135 programs. Within the modified model, the production rate showed a significant and inverse relationship to direct labor requirements. Moreover, this modified model was more accurate in predicting direct labor requirements than was the standard learning curve model. This research extended the modified model to avionics, validated it there, and confirmed its superior predictive ability, both statistically and subjectively. Therefore, this model is recommended for use as a predictor of direct labor requirements in ongoing avionics production programs. The program was modified to include options for predictive ability tests and for projection sensitivity matrices. (Author)

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AD-A077 725

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A077 475 1/3 14/2 14/1

BOEING AEROSPACE CO SEATTLE WA

New Remotely Piloted Vehicle Launch and Recovery Concepts. Volume I. Analysis, Preliminary Design and Performance/Cost Trade Studies.

(U)

DESCRIPTIVE NOTE: Final rept. Mar 78-Mar 79, JUN 79 260P Baumgartner, Steven J. : Brister, James G. ; Rajpaul, Vinod K. ; Yurczyk, Roger F. :  
 CONTRACT: F33615-78-C-3404  
 PROJ: 2402  
 TASK: 01  
 MONITOR: AFFDL TR-79-3069-VOL-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A076 611.

DESCRIPTORS: \*Remotely piloted vehicles, \*Launching, \*Recovery, \*Air cushion vehicles, Systems analysis, Experimental design, Dynamic tests, Performance tests, Cost analysis, Trade off analyses, Bags, Computer programs, Landing, Steady state, Acquisition, Survival (General), Requirements, Weather, Flight testing, Maintainability, Reliability, Vulnerability, Life cycle costs, Simulation, Ground support equipment

(U)

IDENTIFIERS: Dynamic analysis, Air bags, WUAFDL24020108, PE62201F

(U)

Dynamic analysis, preliminary design, and performance/cost trade studies of air bag skid and air cushion concepts for launch and recovery of Boeing and Rockwell advanced RPV concepts have been conducted. Dynamic analysis was performed using the six degree-of-freedom computer program EASY. Dynamic simulations included perturbations to steady state flight, landing, and takeoff simulations. Launch and recovery concepts investigated were air bag skid system, air cushion recovery systems, integrated air cushion system, and air cushion launch platform. Performance/cost trade study factors investigated were complexity, fuel requirements, adverse weather capability, ground equipment and facility requirements.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A077 373 1/3

UNITED TECHNOLOGIES CORP STRATFORD CT SIKORSKY AIRCRAFT DIV

Advanced Structures Concepts R and M/Cost Assessments.

(U)

DESCRIPTIVE NOTE: Final rept. Oct 77-Feb 79, SEP 79 237P Cook, Thomas N. ; Kay, Bruce F. :  
 REPT. NO. SER-510016  
 CONTRACT: DAAJ02-77-C-0061  
 PROJ: 1L262209AH76  
 TASK: 00  
 MONITOR: USARTL TR-79-16

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Airframes, \*Composite structures, Fuselages, Composite materials, Bonded joints, Reliability, Aircraft maintenance, Fiber reinforced composites, Sandwich construction, Honeycomb cores, Repair, Damage, Impact, Life cycle costs

(U)

IDENTIFIERS: PE62209A, ASH76, WU215

(U)

Recent programs have investigated various aspects of the design and manufacture of advanced composite airframe structures for helicopters. Evaluation of the reliability and maintainability (R and M) and operating cost characteristics of the evolving design concepts has been limited, however. The objective of this program has been to assess the overall potential of advanced composite structures from the standpoint of R and M and life-cycle cost. A survey was made of in-service experience with helicopter airframe structures, concentrating particularly on bonded structures and composite materials. The surveys included visits to Army helicopter depots where typical types of damage were examined and discussed. A review was also made of published data on composites in use with fixed-wing aircraft. It was established that with the exception of some secondary structure, experience with composites in helicopter airframe applications is very limited, and that quantitative reliability factors cannot yet be established. However, it was concluded that the majority of failures with advanced composites will occur from external causes.

(U)

AD-A077 373



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A077 331 13/10 14/1 5/1

VIRGINIA POLYTECHNIC INST AND STATE UNIV BLACKSBURG DEPT  
OF AEROSPACE AND OCEAN ENGINEERINGAnalysis of the Cost of Variable Workloads on  
Shipbuilding.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Apr 78-1 Oct 79.  
NOV 79 250P Magnuson, Allen H.; Terry,  
Robert W.;REPT. NO. VPI-AERO-103  
CONTRACT: N00014-78-C-0411

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Shipbuilding, \*Cost analysis,  
\*Management planning and control, Job analysis,  
Allocations, Transfer functions, Variables,  
Operations research, Value engineering, Plannin

(U)

The effect of shipyard workload variation on the cost of building ships has been analyzed. The results of four efforts are presented. The first major effort consists of an analysis of the effect of work density (i.e. worker crowding) on shipbuilding productivity and cost. The results show that an optimum least cost construction time and work-force level exist as a result of a tradeoff between work density effects and fixed costs. The second effort was an attempt to identify causes of shipyard productivity variation based on interviews with shipyard supervisory personnel. The third effort involved development of a framework for estimating transfer functions to describe how workload variation affects cost. This work is to be based on historical production and cost data. A description of adapting the Box-Jenkins forecasting methodology to the problem is presented. The fourth effort concerns development of a shipyard planning system to minimize cost of adjusting to workload variations. A review of current approaches to multi-resource/multi-project planning models is given along with a proposed decomposition of the planning problem into strategic and tactical components. The strategic or long-range planning deals with aggregate issues such as organizational goals, long-range manpower planning and facilities expansion.

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Z0W07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A077 264 5/9

GENERAL ACCOUNTING OFFICE WASHINGTON DC FEDERAL PERSONNEL  
AND COMPENSATION DIVDOD 'Total Force Management' -- Fact or  
Rhetoric.

(U)

JAN 79 36P  
REPT. NO. GAO/FPCD-78-82

## UNCLASSIFIED REPORT

Availability: U.S. General Accounting Office,  
Distribution Section, Room 1518, 441 G St. NW,  
Washington, DC 20548 (No copies furnished by DTIC).  
SUPPLEMENTARY NOTE: Report to the Congress.DESCRIPTORS: \*Personnel management, \*Manpower,  
Costs, Guidance, Cost effectiveness, Department  
of Defense, Air Force, Management information  
systems

(U)

IDENTIFIERS: Force management, Military costs

(U)

Rising manpower costs and increasing competition for funds underscore the importance of good management within the Department of Defense (DOD). Congressional interest in reducing military costs without sacrificing readiness further illustrates the need for competent management of the DOD work force. The guidance that is available does not acknowledge constraints and is vague and incomplete, generally addressing only segments of the total manpower resources. Further, the guidance requires no trade-off analyses to justify the type of manpower requested and provides little information on cost considerations other than directing the services to seek the least costly manpower program. Consequently, each service has developed its own manpower systems with its own policies and sets of logic. However, the Air Force is the only service with a total force management system; the Army and Navy have only recently started to develop one. When the latter two have such a system, DOD will have made a major step toward achieving effective total force management.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A077 166 15/5 14/1

ARMY ENGINEER STUDIES CENTER WASHINGTON DC

US Army, Air Force, and Navy RPMA  
Consolidation in Panama. A Cost-Benefit  
Analysis. Volume II.

(U)

OCT 79 264P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A077  
165.

DESCRIPTORS: \*Military facilities. \*Cost analysis.  
Joint military activities. Management planning and  
control. Panama. Savings. Army Corps of  
Engineers. Air Force. Army. Navy

(U)

This annex and its appendixes provide background  
information about the Air Force, Army, and  
Navy and their current method of real property  
maintenance activity (RPMA) operation (CMO).  
The annex provides a geographical/physical  
perspective of the installations under consideration.  
Appendixes C-1 and C-2 discuss the services'  
current operations and workload and contain a  
discussion of the installation support provided.  
Appendix C-3 presents an overview of the current  
RPMA reporting procedures and the necessary  
considerations for consolidation actions.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A077 165 15/5 12/1

ARMY ENGINEER STUDIES CENTER WASHINGTON DC

US Army, Air Force, and Navy RPMA  
Consolidation in Panama. A Cost-Benefit  
Analysis. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. Jan-Sep 79.

SEP 79 118P Cooper, Gerald E. ;Flowers, George A. ;Underwood, Elton M. ;Halayko, Robert H. ;Grieco, Ralph ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A077  
166.

DESCRIPTORS: \*Military facilities. \*Cost analysis.  
Maintenance management. Panama. Feasibility  
studies. Savings. Economics. Cost  
effectiveness

(U)

IDENTIFIERS: RPMA(Real Property Maintenance  
Activities)

(U)

This OSD-directed study determined the  
feasibility of consolidating real property  
maintenance activities (RPMA) for all services in  
the Panama Canal Zone. It considered  
feasibility with regard to geographic, functional,  
and economic factors. It applied the continuing  
objective of DOD policy and guidance which is to  
ensure that RPMA at military installations is  
consolidated where such action is cost effective and  
does not result in mission impairment. The study  
showed several approaches to consolidation to be  
feasible though hardly equal. One alternative, a  
single manager concept, was found superior to the  
others. However, it was recommended for  
implementation only if tied to a longer-term goal of  
consolidating and standardizing all Base  
Operating Support (BOS) for the three services.  
Because of delays in working out Treaty details  
and Treaty-induced turbulence in general,  
implementation of the RPMA phase of BOS  
consolidation should be postponed for from 1 to 2  
years. This evolutionary approach to all BOS will  
minimize short-term transition difficulties, maximize  
long-term savings to DOD in Panama, and set a  
standard for much wider application later. (Author

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A077 064 15/5 12/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
ENGINEERING

Application of a Bayesian Approach to  
Updating Airframe CERs.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 79 179P Dietrich, Walter D. ;  
REPT. NO. AFIT/GSM/SM/76D-30

UNCLASSIFIED REPORT

DESCRIPTORS: \*Airframes, \*Cost estimates,  
\*Mathematical prediction, Procurement, Data bases,  
Bayes theorem, Regression analysis, Theses  
IDENTIFIERS: \*Cost estimating relationships

(U)

(U)

This study investigates a Bayesian approach for developing a parametric equation which will estimate the recurring cost of the next lot/unit of an airframe program. Recurring costs are predicted because definitionally these costs are expected to reflect the cost for a follow-on production unit. Although the data base used for this study consisted of production cost information, the Bayesian approach may be useful for providing a parametric estimate of production cost using recurring costs from a prototype effort. However, until definitional problems associated with separating engineering and tooling costs into recurring and nonrecurring categories are resolved, predictions of production or next unit engineering and tooling costs will be marginal. Because of the definitional problem, total cost, (nonrecurring and recurring) was used in this study to develop Bayesian updated CERs for the engineering and tooling categories.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A076 981 14/1 17/7

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
ENGINEERING

A Study of Two Avionics Life Cycle Cost  
Models and Their Applicability in the  
Communications-Electronics-Meteorological  
Environment.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 79 57P Drobot, Nicholas J. ;  
Johnson, Martin H. ;  
REPT. NO. AFIT/GSM/SM/79S-5

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models, \*TACAN, \*Life cycle  
costs, Communication equipment, Avionics,  
Logistics support, Navigational aids, Military  
procurement, Flow charting, Theses

(U)

This study determines the applicability of Life Cycle Cost (LCC)/Logistic Support Cost (LSC) models in the CEM environment. The scope of this study addresses two of the models identified (LSC, PRICE) with respect to three Air Force TACAN systems. A methodology is developed to evaluate each model based on the five desirable model characteristics: availability of input data, validity, sensitivity, completeness, and documentation. The results presented are also framed within the above model characteristics. The most important model characteristic, validity, is assessed by comparison with an AFCS cost study of NAVAIDS equipment. Based on the methodology, the results indicate that both models are applicable in the present and future CEM environment.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 924 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICS

A Cost Model for Air Force Institute of  
Technology Programs. (U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 79 170P Cox, John R. , Jr. ;  
Hotchavog, Kenneth J. ;  
REPT. NO. AFIT-LSSR-18-79B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models, \*Cost analysis,  
Forecasting, Education, Schools, Air Force,  
Accumulation, Theses (U)

This research developed a cost model to facilitate the accumulation of the full costs of individual AFIT education programs with fiscal year 1977 and 1978 data used to illustrate the model. Cost objectives, within the AFIT schools and programs, were identified for assignment of costs. Elements of cost applicable to the cost objectives were identified, defined, and categorized as direct, indirect, and other (student pay and allowances). The indirect costs of education were further subcategorized as AFIT indirect, base support, and command overhead. An additional cost category of unfunded retirement was included as a separate cost element. Using these cost categories, the cost per student week for each cost objective was determined. The modular composition of the cost model provides a high degree of utility, permitting the user to delete cost components if less than a full cost profile is desired. The model permits comparison and analysis of cost components, either in total cost or in cost per student week. Additionally, the model provides the basis for cost analysis as expense data become available in future years. Finally, the model provides a framework useful for analyzing costs of other educational activities. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 833 5/3 22/4

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Maintenance Surcharge for Range Use at the  
Pacific Missile Test Center. (U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 79 107P Corbett, James T. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Launching sites, \*Maintenance  
management, \*Costs, Maintenance,  
Ranges(Facilities), Income, Finance,  
Communication equipment, Telemeter systems,  
Command and control systems, Search radar, Radar  
tracking, Allocations, Theses (U)  
IDENTIFIERS: Pacific Missile Test Center (U)

The Pacific Missile Test Center, PMTC, is utilized by various DOD components to test and evaluate weapons systems. Range facilities include tracking and surveillance radar, telemetry, communication, recording and command/control/destroy instrumentation systems. PMTC is a component of DOD's Major Range and Test Facility Base and is subject to operating under a Uniform Funding Policy. This thesis investigates the proposal made by PMTC's Engineering and Design Department that a surcharge system be developed to levy instrumentation maintenance costs on range users. The DOD organization for RDT&E and Weapon Systems Acquisition is discussed in brief. This is followed by a detailed examination of the Uniform Funding Policy and Industrial Maintenance Principles. The PMTC Financial Management System is presented and surcharge implementation problems are identified. A conclusion is made to effectuate a surcharge; and allocation and implementation procedures are introduced. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 630 5/1 5/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

The Impact of Cost Accounting Standard  
Number 409 on the Defense Industry.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 79 152P Kline, Jack C. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Accounting, \*Costs, Contracts,  
Standards, Profits, Government procurement,  
Industrial equipment, Allocations, Estimates,  
Records, Finance, Contract administration,  
Management planning and control, Military  
procurement, Regulations, Theses  
IDENTIFIERS: \*Depreciation, Defense industries,  
Service life

(U)

(U)

The purpose of this thesis is two-fold. First, it seeks to develop a defense industry perspective on depreciation in general and Cost Accounting Standard No. 409 in particular. The historical development of the Standard and the issues arising from it provide a framework for evaluation. Second, it evaluates these issues in present terms with accurate data reflecting the opinion and experience of industry representatives. Data were gathered by the use of a questionnaire. Results show that the Standard had a fairly modest impact on the defense industry. Recommendations are made concerning the issuance of Cost Accounting Standards and areas for future research. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 583 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

A Cost Accounting Standard on Capacity  
Related Costs: A Desirability and Feasibility  
Analysis.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 79 96P Kennedy, Harvey L. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Accounting, \*Costs, Standards,  
Feasibility studies, History, Contracts,  
Requirements, Theses  
IDENTIFIERS: Contract pricing, Pricing

(U)

(U)

The purpose of this thesis was to examine the subjects of capacity and capacity-related costs from both a theoretical and pragmatic standpoint and to determine the desirability and feasibility of a formal cost accounting standard on capacity-related costs. The writer attempted to simulate, in an individual effort, the staff work of the Cost Accounting Standards Board (CASB) through a literature survey and an analysis of the CASB issues paper on capacity-related costs. The thesis concluded that there were potential benefits to the government if a standard could be developed. However, a standard that could meet the objectives of the Cost Accounting Standards Board did not appear feasible, primarily because of difficulties in the accurate measurement of various capacity levels and because such a standard could lead to unduly complex accounting procedures and excessive administrative costs. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 373 1/3 11/4

BUDD CO FORT WASHINGTON PA TECHNICAL CENTER

Feasibility Study of a Cost-Effective  
Composite Materials Maximum Performance  
Escape System Seat.

(U)

DESCRIPTIVE NOTE: Final rept. May-Sep 78.

SEP 78 69P

CONTRACT: N62269-78-C-0112

PROJ: F41400

TASK: WF41400000

MONITOR: NADC 79011-60

UNCLASSIFIED REPORT

DESCRIPTORS: \*Ejection seats, \*Composite materials,  
Graphite, Synthetic fibers, High strength,  
Lightweight, Stiffness, Aluminum, Comparison,  
Cost effectiveness, Naval aircraft, Escape  
systems, Molds(Forms), Manufacturing  
IDENTIFIERS: PE62241N, MUZA604

(U)

(U)

Ejection seats used in military aircraft are  
traditionally fabricated with sheet metal, formed or  
riveted into a bucket structure. Using conventional  
metal materials has several drawbacks, namely, high  
initial production costs required by complexity of  
manufacture, relatively short service life due to  
environmental exposure and high maintenance costs.  
Under the U.S. Navy's continuing search for  
improved escape systems, it is required to explore  
the potential of using advanced 'state-of-the-art'  
materials to reduce or eliminate these drawbacks.  
'Composite' materials and/or a combination of  
composite and aluminum are explored in this study and  
appear feasible. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 218 17/2 5/1

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM  
ANALYSIS DIV

Implementing Usage-Sensitive Charges for  
AUTODIN. Volume II. AUTODIN Technical  
Appendices.

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 78 82P

Bell, James P. ; Fry, John

N. ; Moody, Dale L. ;

REPT. NO. IDA-S-504-VOL-2

CONTRACT: DAHC15-73-C-0200

MONITOR: IDA/HQ.SBIE 79-21639.AD-E500 099

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A076  
217.

DESCRIPTORS: \*Communications traffic, \*Data  
transmission systems, \*Costs, Utilization, Rates,  
Allocations, Computerized simulation,  
Communications networks, Department of Defense,  
Digital systems, Telephone systems, Accounting,  
Management planning and control  
IDENTIFIERS: AUTODIN

(U)

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A technique is developed for accumulating and  
processing data on AUTODIN digital communication  
usage, applying usage rates and computing user  
charges for billing purposes. The program was  
activated on Defense Commercial Communications  
Office computers and tested using a special 1978  
sample of actual system traffic and several alternate  
rate structures. Resulting cost distributions are  
shown and discussed. The problems of system  
implementation and interpretation of data are  
discussed. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 217 17/2 5/1

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM  
ANALYSIS DIVImplementing Usage-Sensitive Charges for  
AUTODIN. Volume I. Basic Study.

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 78 67P Bell, James P. ; Fry, John  
N. ; Moody, Dale L. ;  
REPT. NO. IDA-S-504-VOL-1  
CONTACT: DAHC15-73-C-0200  
MONITOR: IDA/HQ,SBIE 78-20707,AD-E500 098

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A076  
218.DESCRIPTORS: \*Communications traffic. \*Data  
transmission systems. \*Costs. Utilization. Rates.  
Allocations. Computerized simulation.  
Communications networks. Department of Defense.  
Digital systems. Telephone systems. Accounting.  
Management planning and control  
IDENTIFIERS: AUTODIN. Store and forward  
communications. Digital communications

(U)

(U)

A technique is developed for accumulating and  
processing data on AUTODIN digital communication  
usage, applying usage rates and computing user  
charges for billing purposes. The program was  
activated on Defense Commercial Communications  
Office computers and tested using a special 1978  
sample of actual system traffic and several alternate  
rate structures. Resulting cost distributions are  
shown and discussed. The problems of system  
implementation and interpretation of data are  
discussed. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 163 17/2.1 1/3 14/2 14/1  
9/2

AIR FORCE AVIONICS LAB WRIGHT-PATTERSON AFB OH

SATCOM 'EHF' Airborne Terminal Availability to  
Cost Analysis Demonstration.

(U)

DESCRIPTIVE NOTE: Technical rept. Jul 78-Apr 79.

JUL 79 151P Barman, Herbert M. ;  
REPT. NO. AFAL-TR-79-1105  
PROJ: 1227  
TASK: 03

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
DESCRIPTORS: \*Communication satellite terminals.  
\*Avionics. \*Reliability(Electronics). \*Cost  
analysis. Radio transmitters. Radio receivers.  
Extremely high frequency. Ka band. Jet transport  
planes. Systems analysis. Computer programs.  
Operational readiness. Missions. Systems  
engineering. Systems management. Maintainability.  
Trade off analyses. Malfunctions. Mathematical  
prediction. Tables(Data)  
IDENTIFIERS: Depend computer program. TASA(Tabular  
System Analysis). C-135 aircraft.  
WUAFAL12270313. PE63431F

(U)

(U)

A practical approach (TASA/DEPEND Program) for  
analyzing system 'ilities' was demonstrated based on  
results reported in Technical Reports AFAL-  
TR-78-45 and AFAL-TR-78-135. This approach  
provides an analysis tool for studying the impact of  
changes in mission use on reliability, availability  
and dependability so that mission plans can be  
optimized with respect to achieving design objectives  
as related to cost. An important feature of this  
analysis approach is that the impact of malfunctions  
and failures on system availability and cost are  
separately assessed. This makes it possible to  
directly relate the contributions of hardware module  
reliability and maintainability to functional block  
performance. Such studies provide a means for  
concentrating reliability and maintainability  
resources in areas that will provide the maximum  
system improvement at the minimum cost. Also, a  
relational basis for trade-offs between reliability  
and maintainability requirements is obtained in  
relationship to cost.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 587 5/1 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICS

Cooperative Logistics Supply Support  
Arrangement Pricing Relationships Between  
Programmed and Nonprogrammed Requisitions.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 79 106P Breed, John A.; Winn,

James S.;

REPT. NO. AFIT-LSSR-8-79B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement, \*Logistics  
support, \*Cost analysis, \*Contract administration,  
Military supplies, Spare parts,  
Government(Foreign), Regulations, Data bases,  
Statistical analysis, Analysis of variance,  
Hypothesis, Logistics management, Operational  
effectiveness, Theses

(U)

IDENTIFIERS: Foreign military sales

(U)

The United States Government participates  
with friendly countries in Foreign Military  
Sales (FMS) arrangements to enhance its  
objectives of peace and security. The Department  
of Defense usually will complete FMS contracts  
only after insuring that the foreign customer has  
adequately considered logistical support for the  
weapon systems sold. Supply Support  
Arrangements (SSA) are negotiated to provide this  
follow-on logistical support to countries who invest  
and participate in the U.S. defense logistics  
system. Under this arrangement, foreign governments  
are required to put up advance equity funds equal to  
a stated portion of the inventory items to be  
purchased for their needs. This causes items in the  
SSA to become programmed for foreign customers and  
should result in lower prices based on advanced  
procurement, shipments by the Item Manager below  
the control level, and exclusion of replacement  
pricing for programmed requisitions. The purpose of  
this thesis was to determine if a significant  
difference exists in final billing prices for  
programmed versus nonprogrammed Cooperative  
Logistics Supply Support Arrangement (CLSSA)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 586 14/1 9/3 14/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICS

An Operating and Support Cost Model for  
Avionics Automatic Test Equipment.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 79 180P Guerra, Joel A.; Lesko,

Andrew J.; Pereira, Jose G.;

REPT. NO. AFIT-LSSR-21-79B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models, \*Avionics, Aircraft  
equipment, Life cycle costs, Test equipment,  
Automatic, Ground support equipment, Weapon  
systems, Logistics support, Maintenance, Training,  
Mathematical model, Computer programs, Theses

(U)

One of the fastest growing elements of weapon  
system support equipment which relates directly to  
Operating and Support (O and S) costs is  
Automatic Test Equipment (ATE). The  
importance of ATE has expanded to such a degree  
that it requires additional management attention.  
The importance is exemplified by the \$600 million  
projected development and acquisition costs of ATE  
for the F-16. This amount of cost qualifies the  
F-16 ATE for major program status. This thesis  
documents the development of a model to estimate and  
measure O and S costs for Avionics ATE. The  
model will be an important addition to the tools used  
in ATE Life Cycle Costing (LCC) techniques.  
It is envisioned primarily as an evaluation tool to  
be used in ATE source selection, but may also be  
useful in various design trade-off studies.

(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 582 5/1 14/1 5/9

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICS

Development of Improved Criteria for  
Determining the Need for Pricing Staff  
Action.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 79 106P Martinez, Margaret A. ;  
McConnell, Thomas J. ;  
REPT. NO. AFIT-LSSR-1-79B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force procurement, \*Contract  
administration, \*Cost analysis, Contract proposals,  
Specialists, Skills, Money, Planning programming  
budgeting, Decision making, Resource management,  
Job analysis, Theses

(U)

The objective of this research was to determine  
whether improvement could be made in the current  
method of determining the need for pricing staff  
action. Currently, a dollar threshold is the sole  
criterion used in Air Force Contracting and  
pricing offices to determine whether the price or  
cost analysis of a contractor's proposal should be  
performed by the pricing office or by the contracting  
office. While this sole criterion is convenient and  
easy to apply, it was not considered to be an  
effective decision rule. Interviews conducted with  
pricing experts in both Air Force Systems  
Command and Air Force Logistics Command  
revealed that the dollar threshold did not, in most  
cases, identify those contracts requiring the special  
expertise of the pricing offices. The research  
indicated that the use of a decision rule which  
considered the factors of type of contract, nature of  
buy, contracting officer skill, complexity, and  
contractor, in addition to dollar value would result  
in a more effective use of pricing resources.  
(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 530 13/10 14/1 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Marginal Cost Factors for High Performance  
Ships and their Impact on Subsystem  
Design.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
MAY 78 194P Turner, Douglas Kearney ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Hydrofoil craft, \*Surface effect  
ships, \*Cost analysis, Naval architecture, Systems  
engineering, Computerized simulation, Life cycle  
costs, Weighting functions, Naval procurement,  
Weapon systems, Ship defense systems, Sonar  
equipment, Marine surface propulsion, Cost models,  
Planning programming budgeting, Theses

(U)

Investigation reveals that major weapon,  
propulsion, and sensor subsystems, selected for use  
aboard Naval vessels, are designed many years prior  
to the development of a ship. The tendency, by  
Ship Acquisition Managers, to select off-the-  
shelf equipment is the result of various political  
pressures and a requirement to minimize the technical  
risk of the total ship system. Subsystem  
Designers develop their product without regard for  
the subsystem's impact on possible future ship  
designs. The physical characteristics (i.e. weight,  
required manning, electrical power, and space  
required) of a subsystem are not controlled and the  
growth of these parameters is a major factor in the  
escalating cost of Naval ships. To assist both  
the Ship and the Subsystem Acquisition  
Managers/Designers in controlling costs,  
Marginal Cost Factors are proposed. Previous  
work has demonstrated the validity of the concept of  
Marginal Factors to predict the ship-growth costs  
due to the impact of subsystems on conventional  
displacement ships. This thesis builds upon this  
work by using two ship synthesis computer models to  
generate Marginal Weight Factors for two high  
performance ship types of recent interest to the U.  
S. Navy - Hydrofoils and Surface Effect  
Ships. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 511 13/13 5/1 15/3

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN IL

Real Estate Cost Estimating Techniques for PL 91-646 Relocation Costs.

(U)

DESCRIPTIVE NOTE: Final rept..

SEP 79 191P Poskus, U. R.; Stemas, G.

D.: Stawarz, S. P.;

REPT. NO. CERL-TR-P-103

CONTRACT: IAO-RE-77-1, IAO-RE-77-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Housing(Dwellings). \*Cost estimates. \*Army Corps of Engineers. Relocation. Least squares method. Computer programs. Military engineering. Public relations. Construction. Benefits

IDENTIFIERS: Real estate

(U)

(U)

This report documents the development of a predicting model which would better estimate the amount of money required by Districts to compensate individuals relocated from their residences, businesses, or farms as a result of U. S. Army Corps of Engineers construction. The predictions are the result of applying the least squares method to previous District and state payment data. Three different approaches for developing the model were attempted. The approach which used Docket Sheet data broken out by Fiscal Years 72 through 76 was selected as having the highest probability for success. Using the information from these Docket Sheets, average total payments were computed by state and by District, and average values were found for each of 15 payment categories. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 500 1/3

ROCKWELL INTERNATIONAL EL SEGUNDO CA NORTH AMERICAN AIRCRAFT DIV

Aircraft Transparency Failure and Logistical Cost Analysis - Supplemental Study.

(U)

DESCRIPTIVE NOTE: Final rept. Feb-Jun 79.

JUN 79 252P Brown, S. S.;

REPT. NO. NA-79-237

CONTRACT: F33615-77-C-3060

PROJ: 240

TASK: 03

MONITOR: AFFDL TR-79-3083

UNCLASSIFIED REPORT

DESCRIPTORS: \*Transparent panels. \*Aircraft. Windshields. Windows. Aircraft panels. Failure(Mechanics). Aircraft maintenance. Reliability. Logistics support. Life cycle costs. Jet fighters. Helicopters. Fittings. Supports. Protective coatings. Lubrication. Windshield wipers

(U)

IDENTIFIERS: F-4 aircraft. A-7D aircraft. C-130 aircraft. CH-53 aircraft. CH-3 aircraft. UH-1 aircraft. WUAFFDL24020302. PE62201F

(U)

Concern for increasing costs in maintenance of transparency systems has prompted the Air Force Flight Dynamics Laboratory to sponsor this study contract. The object of this study is to identify the high-cost, high maintenance transparency components; identify cause of failures; and recommend corrective programs to reduce cost of ownership to the Air Force Logistics Command. The study involved the review of 20 selected aircraft in current inventory to establish an extensive data base relating transparency maintenance activity and associated logistical support costs. An important adjunct to this study was to research design characteristics, perform a failure analysis, and identify associated logistical support cost for each study aircraft. By using a selective process of correlating the transparency failure modes and maintenance costs with the relative stature of aircraft in current inventory, corrective programs were established and verified by life-cycle cost

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AD-A075 500

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 444 15/7 1/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

An Analysis of the Cost Effectiveness of a  
Specialized Mission Helicopter in the U.S.  
Coast Guard.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 79 135P King, N. Edward ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Coast Guard,  
Missions, Costs, Cost effectiveness, Shipboard,  
Naval operations, Theses

(U)

The operations which might be performed by specialized mission helicopters are identified and several hypothetical mixes of these helicopters are developed and analyzed. Actual flight hours performed in fiscal years 1974 through 1978 and used as a data base for the study. The alternatives are analyzed in terms of total differential costs of performing the same missions that were conducted during the base period. Aspects such as the adding of additional helicopters to stations without additional personnel, dual qualification of personnel, shipboard operations of single-engine helicopters, and the short-range recovery replacement helicopter are also analyzed. It is concluded that it would have been cost effective to have operated specialized mission helicopters during the base period. Projections of future helicopter activity indicate that this advantage would continue into the future. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 437 5/1 1/3 14/1

ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH  
KSThe A-10 and Design-to-Cost: How Well  
Did It Work.

(U)

DESCRIPTIVE NOTE: Research study.

MAY 79 51P Carleton, Roger E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Attack bombers, \*Contract  
administration, \*Design to cost, Military  
procurement, Scheduling, Performance(Engineering),  
Weapon systems

(U)

IDENTIFIERS: A-10 aircraft, Constraints

(U)

This document covers systems procurement in a design-to-cost atmosphere. Identifies deficiencies in this program and offers recommendations to improve this lack of responsiveness. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 272 5/9 5/1 15/5 14/1

DYNAMICS RESEARCH CORP WILMINGTON MASS

Human Resources, Logistics, and Cost  
Factors in Weapon System Development:  
Demonstration in Conceptual and Validation  
Phases of Aircraft System Acquisition.

(U)

DESCRIPTIVE NOTE: Interim rept. Oct 77-Jul 78,  
SEP 79 96P King, Gerard F.; Askren,  
William B.;

CONTRACT: F33615-77-C-0016

PROJ: 1959

TASK: '00

MONITOR: AFHRL TR-79-28(1)

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Appendix A, AD-A075  
209.

DESCRIPTORS: \*Human resources, \*Logistics support,  
\*Life cycle costs, \*Air Force procurement,  
Weapon systems, Short takeoff aircraft, Resource  
management, Data bases, Systems engineering,  
Decision making, Trade off analyses, Manpower  
utilization, Air Force training, Aircraft  
maintenance, Maintenance management, Logistics  
management, Reliability, Avionics, Landing gear  
IDENTIFIERS: WUAFHRL19590002, PE63451F

(U)

(U)

A methodology, the coordinated human resource  
technology (CHRT), was developed to quantify  
critical human resource, logistics, and cost factors  
throughout aircraft acquisition. Knowledge of these  
factors helps influence the selection of a system and  
support design approach. The factors quantified are  
manpower, training, technical documentation, and  
system ownership costs. Reliability and  
maintainability, both of which directly affect the  
foregoing, are also quantified. The CHRT  
methodology also implements an integrated approach  
to personnel, training, and technical documentation,  
and operates from a single, evolving consolidated  
data base. This report describes two parts of a  
three-part demonstration of CHRT application on an  
aircraft acquisition program. Parts 1 and 2,  
respectively, use conceptual and validation  
(prototype) phase data on avionics and landing gear  
systems of the Advanced Medium STOL Transport

(U)

AD-A075 272

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 249 13/5 14/1 13/13

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

A Comparison of Fillet Weld Strength and  
U.S. Navy Design Specifications for Non-  
Combatant Ships and the Economic  
Implications.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
MAY 78 207P McCabe, William Carl :

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Welds, \*Strength(Mechanics),  
Comparison, Economics, Specifications, Design to  
cost, Joints, Corrosion, Fabrication, Geometry,  
Models, Experimental design, Labor, Theory,  
Sizes(Dimensions), Loads(Forces), Yard craft,  
Small ships, Ship hulls, Ships  
IDENTIFIERS: Fillet welds, Noncombatant ships,  
Computer models, Labor costs

(U)

(U)

There is a great interest in the strength of fillet  
welds because the welding operation accounts for  
about 30% of the labor cost in planning and  
constructing ship hulls. One way to reduce welding  
cost is to reduce the required weld size.  
Background information is obtained by reviewing the  
major experimental and theoretical work in the areas  
of static strength, fatigue strength, and shear  
strength of fillet welds. In order to appreciate  
the conditions in the real world, design  
considerations, fabrication considerations, and  
corrosion considerations are discussed. Typical  
joints from existing U.S. Navy ships are  
employed to obtain detailed geometry and local  
loading information to be used as input for a  
computer model which was developed at Massachusetts  
Institute of Technology which uses the finite  
element method for determining the static strength  
for fillet welds. In one particular joint a  
reduction of 30% in the required weld size is  
justified. A future system for analyzing fillet  
weld strength is proposed and explained by the use of  
an example. The economics of intermittent and  
continuous welds are examined, and the economic  
impact that a reduction in the required fillet weld  
size would have on ship construction cost is  
estimated. (Author)

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AD-A075 249

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 209 5/9 5/1 15/5 14/1

DYNAMICS RESEARCH CORP WILMINGTON MASS

Human Resources, Logistics, and Cost  
Factors in Weapon System Development:  
Demonstration in Conceptual and Validation  
Phases of Aircraft System Acquisition-  
Appendix A.

(U)

DESCRIPTIVE NOTE: Interim rept. Oct 77-Jul 78,  
SEP 79 115P King, Gerard F.; Askren,  
William B.;  
CONTRACT: F33615-77-C-0016  
PROJ: 1959  
TASK: '00  
MONITOR: AFHRL TR-79-28(II)

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Appendix A to rept. no. AFHRL-  
TR-79-28(I), AD-A075 272.  
DESCRIPTORS: \*Human resources, \*Logistics support,  
\*Life cycle costs, \*Air Force procurement,  
Weapon systems, Short takeoff aircraft, Resource  
management, Data bases, Systems engineering,  
Decision making, Trade off analyses, Manpower  
utilization, Air Force training, Aircraft  
maintenance, Maintenance management, Logistics  
management, Reliability, Avionics, Landing gear  
IDENTIFIERS: PE63451F, WUAFHRL19590002

(U)

(U)

The Coordinated Human Resource Technology  
and the Consolidated Data Base have been  
demonstrated in the conceptual and validation phase  
of weapon system acquisition. The results of this  
demonstration are reported in AFHRL-TR-79-  
28(I). This report (volume II) constitutes  
Appendix A to that demonstration report and  
provides additional details of the demonstration.  
(Author)

(U)

AD-A075 209

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 099 5/10 5/1 14/1

DECISION RESEARCH EUGENE OR

Behavioral Aspects of Cost-Benefit  
Analysis.

(U)

DESCRIPTIVE NOTE: Technical rept..  
JAN 79 37P Fischhoff, Baruch;  
REPT. NO. PTR-1077-79-1  
CONTRACT: N00014-79-C-0029, ARPA Order-3668

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Rept. no. PTR-1077-79-5,  
AD-A075 100.  
DESCRIPTORS: \*Decision making, \*Cost effectiveness,  
Methodology, Input, Management, Limitations,  
Cost analysis

(U)

Cost benefit analysis asks whether the expected  
benefits from a proposed activity outweigh its  
expected costs. Although based on an appealing  
premise and supported by a sophisticated methodology,  
these procedures have a number of characteristic  
limits on their usefulness as management tools. One  
set of limits is imposed by the unavailability of  
necessary inputs to the analysis. Neither the  
values nor the likelihood of many potential costs and  
benefits can be reasonably approximated by any formal  
computations. They must be derived in whole or in  
part by objective and reliable human judgment.  
Research has shown, however, that probability  
judgments are often quite unreliable and prone to  
systematic biases, while judgments of value are  
highly labile, changing with subtle (and formally  
irrelevant) shifts in the elicitation procedures.  
Relatively little is known about how to reduce  
these differences or assess the impact of those that  
remain. Related difficulties in assessing the  
quality of analyses comprise a second set of limits.  
There have been few systematic evaluations of  
formal analyses or attempts to develop a methodology  
for assessment. A third set of limits is the  
inability of the procedures to address critical  
issues in the management process they are designed to  
assist.

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AD-A075 099

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A074 454 5/1 21/5

BOEING AEROSPACE CO SEATTLE WA BOEING MILITARY AIRPLANE  
DEVELOPMENT ORGANIZATION

An Extension of Engine Weight Estimation  
Techniques to Compute Engine Production  
Cost.

(U)

DESCRIPTIVE NOTE: Final rept.,  
AUG 79 38P Onat,E. ;Tolle,F. F. ;  
CONTRACT: N62269-78-C-0286  
MONITOR: NADC 78103-60

UNCLASSIFIED REPORT

DESCRIPTORS: \*Turbojet engines, \*Cost estimates,  
\*Computer programs, Military aircraft, Engine  
components, Weight, Alloys, Industrial production,  
Costs, Coding

IDENTIFIERS: LPN-NPRC-19399/XS901

(U)

(U)

As a follow-on to previously developed engine  
weight estimation work, a preliminary design engine  
cost estimating code has been produced. The code  
relies on engine thermodynamic characteristics and  
weight as computed by earlier developed codes to  
select raw material types and quantities required to  
produce the engine. An existing Navy technique is  
then used to convert this data into engine cost.  
The code was used to predict the cost of three  
existing engines; errors ranged from 1 to 8% of  
actual costs as reported to NADC. (Author)

(U)

AD-A074 454

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A074 394 13/8 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICS

The Value of the Base Level Industrial  
Engineer.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 79 120P Caples,Buddy C. ;Kwan.  
Anthony J. ;  
REPT. NO. AFIT-LSSR 12-79A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Industrial engineering, \*Military  
facilities, \*Cost effectiveness, Personnel  
management, Ratings, Management engineering,  
Operations research, Data acquisition, Problem  
solving, Theses

IDENTIFIERS: \*Facilities management

(U)

(U)

The objectives of this thesis were to calculate the  
perceived benefit/cost index of each base level  
Industrial Engineering (IE) responsibility and  
to determine the variables that significantly affect  
the perceived value and effectiveness of each base  
level IE responsibility. The majority of the  
thesis was developed around a questionnaire entitled  
Industrial Engineering Cost Effectiveness.  
The questionnaire was mailed to all Air Force  
bases having an industrial engineering branch of  
three or more personnel. The population surveyed  
included officers and civilians holding the following  
positions at each base: Base Civil Engineer,  
Deputy Base Civil Engineer, Chief of  
Industrial Engineering, Chief of Engineering  
and Environmental Planning, Chief of  
Operations and Chief of Resources and  
Requirements. The results of the survey indicate  
that the perceptions of the value and effectiveness,  
importance and benefit/cost index are different for  
each responsibility. Variables that influence the  
perceived value and effectiveness of base level IE  
were identified. Some of the changes that would  
enhance the perceived value of each IE  
responsibility are: giving IE personnel training  
in writing technique, oral techniques, feedback and  
quantitative analysis; allowing IE to participate  
in establishing goals and objectives for its branch. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A074 189 5/9

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

An Analysis of the Cost Implications of  
Employing Success Predictive Criteria in the  
Process of Selecting Navy Recruiters.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 79 142P Shupack, Mary Anderson :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Recruiting. \*Recruiters. Personnel  
selection. Naval personnel. Performance(Human).  
Systems analysis. Cost analysis. All volunteer.  
Theses

(U)

This study analyzed the performance of enlisted  
Navy recruiters from recruiting stations throughout  
the United States against a measure of  
effectiveness defined in terms of the NAVCRUITCOM  
Honor Roll. Six variables, describing personal  
characteristics were analyzed in an attempt to  
explain recruiter success. The study showed that  
the best predictor of recruiter success was the level  
of formal education attained while the best  
explanation for recruiter failure was the  
individual's rate. Cost implications of high  
turnover and low productivity within the Navy  
recruiting force were then outlined and the role  
improved recruiter selection techniques could play in  
reducing these costs discussed. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A074 054 15/7 16/4 12/2

BATTELLE COLUMBUS LABS OH

Cost-Driven Analysis for Computerized  
Production Process Planning.

(U)

DESCRIPTIVE NOTE: Final rept..  
JUL 79 164P Hill, Terrance E. ; Ryner.  
Thomas G. ; Noton, Bryan R. :  
CONTRACT: DAAK40-77-R-0138

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army planning. \*Guided missiles.  
\*Operations research. Cost analysis. Flow  
charting. Management engineering. Production. Data  
acquisition. Computer programs. Savings

(U)

This report describes the work done by Battelle's  
Columbus Laboratories (BCL) for the U.S.  
Army Missile Research and Development  
Command (MIRADCOM) to develop a methodology for  
examining missile manufacturing costs, cost drivers  
in manufacture, and future missile MANTECH programs  
from the standpoint of best ROI of funds. This  
objective has been met through the development of a  
missile parts classification system (MPCS) which  
provides a methodology for examining cost drivers in  
missile manufacture plus a variety of other  
interactive possibilities achievable through the  
availability of cost information at the discrete part  
level. As devised, this methodology will  
accommodate both present as well as future missile  
systems. In other words, the methodology is  
designed such that as new technologies develop, the  
system is sufficiently flexible to accommodate these  
changes. Data would be stored and retrieved from a  
computer to allow general comparisons of costs which  
will identify cost drivers, MANTECH projects with  
high ROI, and estimates of future missile costs.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 972 5/1 14/1 9/2

ASSESSMENT GROUP SANTA MONICA CA

Demonstration Model System. Volume V.  
Slide-Rule Model System User's Guide.

(U)

JUL 79 33P Neches, Thomas M. ;  
REPT. NO. AG-PR-A101-VOL-5  
CONTRACT: N00014-78-C-0465

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A073  
968.DESCRIPTORS: \*Cost analysis, \*Cost models, \*Design  
to cost, Life cycle costs, Models, Instructions,  
Input, Computer programs, Computer applications,  
Manuals

(U)

The Level I 'Slide-Rule' Cost Model System is implemented on a Texas Instruments TI-59 programmable calculator coupled to a TI-PC-100A Print/Security Cradle. The model system consists of four linked programs, the TDC-Down Model, (TDM) the Lowest Removable Assembly Model (LRAM), the System Aggregation Model (SAM), and the System Confidence Model (SCM). Each program and its data input sets are stored on magnetic cards. The output of each program is used as input to succeeding programs, together with additional input data. The TI-59 has 120 program/data registers, which can be partitioned as desired between program instruction steps and data memory registers. When the calculator is turned on, 60 memory registers are automatically reserved for data storage. All programs other than the TDM use the default allocation. The TDM, however, uses only 40 registers for data storage; the remainder is used to store the program code. Therefore, when running the TDM, the first step after turning on the calculator will be to repartition the memory registers.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 971 5/1 14/1 9/2

ASSESSMENT GROUP SANTA MONICA CA

Demonstration Model System. Volume IV.  
Slide-Rule Model System Program Manual.

(U)

JUL 79 57P Neches, Thomas M. ;  
REPT. NO. AG-PR-A101-VOL-4  
CONTRACT: N00014-78-C-0465

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, AD-A073  
972.DESCRIPTORS: \*Cost analysis, \*Cost models, \*Design  
to cost, Life cycle costs, Spare parts,  
Algorithms, Flow charting, Equations,  
Mathematical models, Computer applications,  
Computer programs, Manuals

(U)

The Slide-Rule Life Cycle Cost Model System (SRS) has been designed as an aid to system, subsystem and assembly designers in making cost estimates and trade-offs early in the design process. At this stage it is still possible for cost analysis to influence design - system cost has not yet been 'locked in' due to the lack of flexibility in system configuration which occurs in the later phases of design. The SRS consists of four linked programs implemented on a Texas Instruments TI-59 programmable calculator coupled to a TI PC-100A printer. Each program is appropriate to a different design phase and aggregation level. The first estimates the life cycle costs of a system by making simplifying assumptions about its subelements; the second is used for the design of a single Lowest Removable Assembly (LRA); the third estimates system or subsystem costs by aggregating the costs of its subelements, computed in the second program; the fourth is a specialized program used to compute the achieved system confidence level against a stock-out of spare parts.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 970 5/1 14/1 9/2

ASSESSMENT GROUP SANTA MONICA CA

Demonstration Model System. Volume III.  
NEDCOM User's Guide.

(U)

JUL 79 14P Benner, Lynne E. ; Neches,  
Thomas M. ;REPT. NO. AG-PR-A101-Vol-5  
CONTRACT: N00014-7C-C-0465

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 4, AD-A073  
971.DESCRIPTORS: \*Cost analysis, \*Cost models, \*Design  
to cost, Life cycle costs, Electronic equipment,  
Computer applications, Repair, Estimates,  
Shipboard, Manuals, Computer programs

(U)

IDENTIFIERS: NEDCOM(Naval Electronics Design  
Cost Model)

(U)

The Naval Electronics Design Cost Model (NEDCOM) is implemented on the APPLE II Computer System. NEDCOM configures a system out of individual Lowest Removable Assemblies (LRA's). The program is capable of handling a system consisting of up to 100 distinct LRA types, each of which is characterized by 7 input variables. In addition, NEDCOM requires as input 61 system-level variables which describe the system operating environment, system manpower and training requirements, system design, and the Naval support environment. The user is given a choice of six different run type options. He can enter new system and LRA data, append a new LRA configuration to an existing system description, alter data previously entered and stored on disk, add additional LRA types to an existing LRA configuration, perform sensitivity analysis on system variables, and finally, run a previously stored system configuration without making any changes. The first two options create new information files which are stored on disk for future use. The third and fourth options are used to alter the information stored on these files. The final two options execute system runs without any changes in stored data.

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AD-A073 970

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 969 5/1 14/1 9/2

ASSESSMENT GROUP SANTA MONICA CA

Demonstration Model System. Volume II.  
The Naval Electronics Design Cost Model  
(NEDCOM): Program Manual.

(U)

JUL 79 44P Neches, Thomas M. ; Benner,  
Lynne E. ;REPT. NO. AG-PR-A101-VOL-2  
CONTRACT: N00014-78-C-C465

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, AD-A073  
970.DESCRIPTORS: \*Cost analysis, \*Cost models, \*Design  
to cost, Life cycle costs, Electronic equipment,  
Computer applications, Repair, Estimates,  
Shipboard, Flow charting, Algorithms, Spare

(U)

parts, Manuals, Equations, Computer programs  
IDENTIFIERS: NEDCOM(Naval Electronics Design  
Cost Model)

(U)

The Naval Electronics Design Cost Model (NEDCOM) is an interactive computer cost model which estimates the life cycle cost of electronic systems to be deployed in a Navy Shipboard environment. It has been designed to aid the system and component designer in conducting design/cost trade-off analysis, as well as providing a link between the designer and the logistics support specialist. NEDCOM is implemented on an APPLE II desktop computer system. While far more capable and sophisticated than the programmable calculator used for the Level I Slide-Rule cost modes (see Volumes IV and V), the APPLE II is much smaller and less expensive than the full-scale computer systems required for the Level III Model (see Volume I). Some of the main features of NEDCOM are the following. Life cycle cost for individual Lowest Removable Assemblies (LRA) are computed for four levels of repair postures: repair at a Contractor operated depot, repair at a military operated depot, local repair, and discard at failure. The best cost of the four postures is automatically selected and aggregated to system level costs to produce a total system life cycle cost estimate.

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AD-A073 969

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 968 5/1 14/1 9/2

ASSESSMENT GROUP SANTA MONICA CA

Demonstration Model System. Volume I.  
Mathematical Models.

(U)

JUL 79 110P

Neches, Thomas M. ; Butler,

Robert A. ;

REPT. NO. AG-PR-A:01-VOL-1

CONTRACT: N00014-78-C-0465

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A073  
969.DESCRIPTORS: \*Cost analysis, \*Manpower, \*Cost  
models, \*Mathematical models, Life cycle costs,  
Production, Spare parts, Repair, Inventory,  
Transportation, Computer applications

(U)

The objective of the project reported in these Volumes is to elucidate the principles of hardware/manpower cost analysis developed in an earlier study. A Framework for Hardware/Manpower Tradeoff Analysis During the Weapon System Acquisition Process. In this Volume, six models are presented. The Level III Model is the most complex and its exposition is used to set notation and explain the underlying concepts of all the models. It is intended to be implemented on a large, production computer. The Level II Model, less complex, was developed for implementation on a stand-alone micro-computer of the sort one might expect to be available to a design team. There are four Level I Models, all developed for use on a programmable calculator. Of the six models, all but the Level III Model have been programmed as part of this project. The Level II Model has been programmed in BASIC on a 48 K microcomputer. A User's Guide and Program Manual for that model constitute Volumes II and III of this study.

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AD-A073 968

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AD-A073 781

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 781 5/1 14/1

NORTH CAROLINA STATE UNIV RALEIGH

Optimal Project Compression with Due-Dated  
Events.

(U)

79 19P

Elmaghraby, S. E. ; Pulat, P.

S. ;

CONTRACT: DAA629-76-G-0204

MONITOR: ARO 13119.3-M

## UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics Quarterly, v26 n2 p331-348 Jun 75 (No copies furnished by DDC).  
DESCRIPTORS: \*Network analysis (Management), \*Cost models, Algorithms, Optimization, Flow charting, Reprints

(U)

Reprint: Optimal Project Compression with Due-Dated Events.



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 581 17/7 14/1

ARINC RESEARCH CORP SANTA ANA CA

Avionics Installation (AVSTALL) Cost Model  
for User Equipment of NAVSTAR Global  
Positioning System.

(U)

JUN 79 48P Stewart.W. ;Allen.D. ;  
Orth.P. ;  
REPT. NO. 1727-04-1-1959  
CONTRACT: F04701-78-C-0124

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Global Positioning System.  
\*Avionics, \*Cost models, Installation, Costs,  
Modification, Military aircraft, Parts,  
Regression analysis, Least squares method  
IDENTIFIERS: Navstar project, Effectiveness(U)  
(U)An avionics installation (AVSTALL) cost model  
developed for application to the Navstar Global  
Positioning System (GPS) is described. The  
model determines the aircraft-peculiar costs of  
installing avionics equipment--for example, GPS user  
equipment--into military aircraft. It is based on  
cost estimating relationships (CERs) developed from  
an analysis of 51 previous Class V avionics  
modifications to Air Force aircraft. The  
development and application of these CERs are  
explained in this report.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 554 15/5 13/13

KAMAN AEROSPACE CORP BLOOMFIELD CT

Design Assessment of Advanced Technology  
Lightweight, Low-Cost Mission-Configured  
Gondola Modules.

(U)

DESCRIPTIVE NOTE: Final rept. Aug 78-Mar 79.  
JUL 79 175P Porterfield,John D. ;  
REPT. NO. R-1558  
CONTRACT: DAAK51-78-C-0012  
PROJ: 1L1622C9AH76  
TASK: 00  
MONITOR: USARTL TR-79-16

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Rept. no. USAAMRDL-TR-  
77-28.DESCRIPTORS: \*Gondolas, \*Cargo handling,  
\*Structural engineering, Helicopters, Modular  
construction, Floors, Superstructures, Tubular  
structures, Beams(Structural), Metal plates,  
Mechanical cables, Structural analysis,  
Lightweight, Low costs  
IDENTIFIERS: \*HEGS(Helicopter External Gondola  
System), WU244, ASH75, PEG2209A

(U)

(U)

The objectives of this program were to identify  
applicable high strength materials and efficient  
structural concepts for application to various  
elements of the helicopter external gondola system  
(HEGS) and to subsequently prepare preliminary  
design arrangements for the HEGS-10, HEGS-20, and  
HEGS-Palletized modules.(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 507 11/4 1/3 5/3 9/2

GRUMMAN AEROSPACE CORP BETHPAGE NY

Manufacturing Cost Data Collection and  
Analysis for Composite Production  
Hardware.

(U)

DESCRIPTIVE NOTE: Final rept. Sep 77-Feb 79.  
MAY 79 109P Rachowitz, B. I.; Coletti,  
R. J.; Tornabe, A. J.;  
CONTRACT: F33615-77-C-3022  
PROJ: 2401  
TASK: '03  
MONITOR: AFFDL TR-79-3041

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Composite materials. \*Cost analysis.  
\*Cost estimates. \*Composite structures.  
\*Airframes. \*Computerized simulation. Tape wound  
construction. Manufacturing. Validation  
IDENTIFIERS: Advanced Composite Cost  
Estimating Model, PE62201F, WUAFFDL24010326

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(U)

This technical report documents the procedures used  
to validate the Advanced Composite Cost  
Estimating Model, by comparing the model output  
with actual costs measured during production  
fabrication. This validation also includes  
recommendations as to the limitations and  
improvements that can be made to the model.  
(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 429 17/2.1 14/1

COMPUTER SCIENCES CORP FALLS CHURCH VA

Earth Terminal Subsystem Study. Volume 1 -  
Small Terminal Cost Analysis.

(U)

DESCRIPTIVE NOTE: Final technical rept..  
MAY 79 50P Winebarger, Ross;  
CONTRACT: DCA100-76-C-0089  
MONITOR: SBIE AD-E100 271

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 4. AD-A073 356.  
Prepared in cooperation with Harris Corp.,  
Melbourne, FL. Government Systems Group.

DESCRIPTORS: \*Communication satellite terminals.  
\*Communication terminals. Cost analysis. Cost  
effectiveness. Communication equipment. X band.  
Antennas. Klystrons. Radio equipment. Military  
procurement. Trade off analyses  
IDENTIFIERS: Satellite communications. Earth  
terminals. Satellite terminals

(U)

(U)

This report addresses the cost sensitivities of the  
major components of a small economical earth  
terminal. A baseline X-band terminal is proposed  
which has a G/T of 20 dB AND AN EIRP of 72 dBW.  
Parametric curves are developed which show the  
changes in hardware cost corresponding to moderate  
changes in component characteristics around the  
baseline values. Parametric cost curves are  
developed for changes in the antenna diameter, RMS  
surface accuracy, antenna efficiency, antenna wind  
performance, transmitter power, type of low-noise  
amplifier, oscillator stability, and phase noise  
performance. Cost data is then developed and  
presented for changes in the terminal G/T, EIRP,  
and availability around the baseline terminal  
performance. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD-A073 400 5/9

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND TECHNOLOGY DIV

Cost-Effectiveness of Computer-Based Instruction in Military Training.

(U)

DESCRIPTIVE NOTE: Final rept. Oct 77-Mar 79.  
APR 79 218P Orlansky, Jesse ;String.

Joseph :

REPT. NO. IDA-P-1375

CONTRACT: DAH015-73-C-0200

MONITOR: IDA/HQ,SEIE 78-20721,AD-E500 088

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military training, \*Cost effectiveness, Computer aided instruction, Individualized training, Performance(Human), Students, Job training, Education, Schools

(U)

The cost and effectiveness of computer-based instruction for military training are evaluated on the basis of about 30 studies conducted since 1968. Four methods of instruction are distinguished and compared: Conventional instruction: group-paced lectures, and discussions. Individualized instruction: self-paced (without computer support). Computer-Assisted instruction (CAI): computer stores and provides instructional materials to students individually via interactive terminals; computer tests and guides students; self-paced. Computer-Managed Instruction (CMI): instructional materials and tests provided away from computer; computer scores the tests and guides students; self-paced.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD-A073 314 5/1 16/4

ARMY MISSILE MATERIEL READINESS COMMAND REDSTONE ARSENAL AL COST ANALYSIS DIV

Target Missile Airframe Costs.

(U)

DESCRIPTIVE NOTE: Technical rept..

MAR 79 22P Anderson, William P. :  
REPT. NO. DRSMI-FC-79-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Target drones, \*Airframes, \*Cost estimates, Production, Equations, Regression analysis

(U)

IDENTIFIERS: MGM-74C missiles, MGM-51A missiles, Redhead-Roadrunner, MGM-107A missiles, AQM-37A missiles, BQM-34A missiles

(U)

A parametric method of estimating the production cost for a proposed TARGET Missile Airframe is presented in this report. A cost estimating relationship (CER) has been developed based upon an independent variable, the estimated airframe weight in pounds. The independent variable (Y) in the CER,  $Y = (A+Bx)$  squared, represents the average unit production cost for the first 700 airframes produced in terms of FY 77 constant dollars. The methodology used in developing this CER as well as a presentation of data and TARGET Missile Technical Descriptions, is included for the benefit of the cost estimator. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 067 5/1 15/5 9/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICSEvaluation of the Engineering Change Proposal  
Cost Evaluation Model. (U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 79 104P

Kehres, John W.; Kolpin, E.

Dan H.

REPT. NO. AFIT-LSSR-21-79A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Life cycle costs, Modification, Contract proposals, Computerized simulation, Costs, Comparison, Decision making, Logistics support, Weapon systems, Systems engineering, Aeronautical engineering, Air Force Logistics Command, Logistics management, Thesis (U)

IDENTIFIERS: ECP (Engineering Change Proposals) (U)

This thesis effort was directed toward the evaluation of a computer model designed as a tool for assessing cost impacts of aircraft engineering change proposals. The Engineering Change Proposal (ECP) Cost Evaluation Model was evaluated in a comparative analysis against the Air Force Logistic Command Logistics Support Cost (LSC) Model. Both models were exercised using data for a hypothetical aeronautical weapon system. The first run of the data served to establish a baseline configuration to which simulated ECPs could be compared against. Subsequent runs were made with changes to the baseline cost estimates recorded. Cost estimates of the baseline configuration were compared to cost estimates of the changed configuration. Comparisons were made of the percent of change within each model and the total cost prediction between the two models. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 018 14/1 21/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICSThe Use of the Maurer Factor for Estimating  
the Cost of a Turbine Engine in the Early  
Stages of Development. (U)

DESCRIPTIVE NOTE: Final rept. Jun 78-Jun 79.

JUN 79 155P

Barrett, Charles W., Jr.;

Koenig, Michael J.;

REPT. NO. AFIT-LSSR-19-79A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Turbojet engines, \*Cost estimates, \*Cost models, Parametric analysis, Statistical analysis, Regression analysis, Theses (U)

IDENTIFIERS: \*Maurer factor (U)

Military managers are faced with increasing systems costs. One area where this increasing cost is especially true is in the acquisition of aircraft weapon systems. A driving factor in the aircraft cost is the turbine engine, and therefore acquisition managers have been tasked with developing cost estimating methods that will more accurately predict turbine engine cost. At present, several parametric costing models available are briefly discussed in this report. However, the primary objective of this report, is to evaluate a costing technique used extensively by the Navy--the Maurer Factor (MF) technique. The MF technique is a parametric costing technique based on the materials in a turbine engine. The report includes the following: (a) a detailed description of the MF technique; (b) a validation of the MF technique; (c) the development of an estimated MF (EMF) model using engine performance parameters; and (d) statistical analysis and validation of the EMF models. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A073 003 14/1 5/1

ADJUTANT GENERAL CENTER WASHINGTON DC POSTAL  
DIRECTORATE

Evaluation of Postage Meters and  
Decentralized Accountability for Official  
Mail Costs.

(U)

DESCRIPTIVE NOTE: Final rept. 5 Sep 78-30 Jun 79.  
JUL 79 57P Beasley, Louis J. , Jr.:  
Sanders, Richard B. , Jr.: Caridakis, Minnie M.

REPT. NO. PL-79-01

UNCLASSIFIED REPORT

DESCRIPTORS: \*Postage meters. Accountability.  
Costs, Cost effectiveness. Management. Army  
IDENTIFIERS: \*Mail costs

(U)

(U)

The Evaluation of Postage Meters and  
Decentralized Accountability for Official  
Mail Cost was conducted in three phases (5 Sep  
78-30 Jun 79) at four activities: The Adjutant  
General Center (TAGCEN); USA Military  
Personnel Center (MILPERCEN); USA Reserve  
Components Personnel and Administration  
Center (RCPAC); and USA AG Publications  
Center, St. Louis (SLAGPC). The objective  
of the study was to determine the cost effectiveness  
of postage meters and decentralized accountability for  
official mail costs, and the desirability of  
discontinuing the current sampling based United  
States Postal Service (USPS) billing system.  
Major impetuses for the study were: (1)  
Questionable validity of the USPS sampling system  
for billing purposes; (2) Requirement for more  
precise user information to support positive dynamic  
management; (3) Lack of funding and user incentive  
to select less costly mailing alternatives; and (4)  
DAIF inspection (Feb 78) conclusion that there is  
essentially no management of Army official mail  
costs at DA or user level. It was determined  
during the study that postage meters were cost  
effective. Projection of test site postage meter  
savings Army-wide for FY79 yields a gross savings  
estimate of \$6,556,918.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 697 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICS

An Analytical Evaluation of Procedures for  
Closing Cost-Type Contracts.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 79 107P Bristow, Michael B. : Voad,  
Joseph E. ;  
REPT. NO. AFIT-LSSR-15-79A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Contract administration. \*Indirect  
costs. Contracts. Regulations. Methodology.  
Costs. Risk. Theses  
IDENTIFIERS: Contract negotiations. Overage  
contracts

(U)

(U)

Physically completed open contracts are an  
administrative and financial burden to the  
government. The Air Force had a procedure for  
the early closeout of cost-type contracts overage due  
to overhead negotiation. This procedure was  
superseded by an early closeout procedure  
subsequently published in the Defense Acquisition  
Regulation (DAR). The primary objectives of  
this thesis are to (1) compare current data to  
previous data which indicated that overhead  
negotiation was the primary reason for overage  
contracts to determine if this condition still exists  
and (2) determine if the DAR early closeout  
procedure is accomplishing its goal. This study  
concludes that (1) negotiations of overhead continue  
to be the primary reason for contracts becoming  
overage; and (2) the DAR procedure hinder the early  
closeout of contracts by certain contractors who were  
previously agreeable to closing contracts using the  
Air Force procedure. The latter conclusion  
attributed to the increased cost risk to the  
contractor. It recommended that a more flexible  
procedure be adopted for the early closeout of  
physically completed cost-type contracts. This  
flexibility will allow procedural variations to be  
used as required by each particular situation.

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AD-A072 697

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 670 21/5 14/1 5/1 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICSValidation of the Detroit Diesel Allison  
Logistic Support Cost Model (Program OS  
590).

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 79 82P Crenk, Howard E. ;  
Haribapakis, Christopher N. ; Jr;  
REPT. NO. AFIT-LSSR-20-79A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Gas turbines. \*Life cycle costs.  
\*Cost models. Military procurement. Logistics  
management. Maintenance management. Department of  
Defense. Logistics support. Theses

(U)

The Department of Defense (DOD) is genuinely concerned about Operation and Support Costs (O/S) during the early stages of the acquisition process. An area of particular interest to the Air Force Aero Propulsion Laboratory (AFAPL) was the validation of Detroit Diesel Allison's O/S cost model, OS590. This study was designed to assist the AFAPL in determining O/S costs for future advanced high technology turbine engines. The results of this research include the following findings: (a) input data for OS590 within the scope of this effort was available from Air Force sources; (b) OS590 produced valid O/S costs; (c) OS590 was sensitive to selected input parameters; and (d) the Directorate of Propulsion YZLR reviewed and agreed that OS590 was complete.

(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 592 15/5 14/1 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF  
SYSTEMS AND LOGISTICSA Summary and Analysis of the Logistics  
Support Cost Model Application to the ACF/  
F-16 Weapon System Acquisition.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 79 126P Davis, William R. ; Mysowski,  
John R. ;  
REPT. NO. AFIT-LSSR-6-79A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs. \*Jet fighters.  
\*Logistics support. Cost analysis. Operation.  
Mathematical models. Weapon systems. Air Force  
procurement. Acquisition. Air Force Logistics  
Command. Theses

(U)

IDENTIFIERS: F-16 jet fighters. A-10 aircraft.  
Operating and support cost models

(U)

Department of Defense Directive 5000.2 states that Life Cycle Cost (LCC) must be considered in the acquisition of major weapon systems. One of the primary tools used in applying LCC techniques is the operating and support (O/S) cost model. One such model--Air Force Logistics Command's Logistics Support Cost (LSC) Model--has recently been employed in the ACF/F-16 acquisition program and continues to be used in managing the F-16 program. This was only the second time an O/S type model had been used in major systems acquisition: the first was with the A-10. The question has arisen whether the use of an O/S type model been effective in acquiring systems with lower operating and support cost. Research focusing on the A-10 O/S cost model use surfaced several major deficiencies. This thesis having focused on the F-16 LSC model use, indicates that improvements have been made, but additional improvements are necessary before the use of O/S type models can be fully effective. The results of face-to-face interviews with General Dynamics and Northrop personnel, involved in the ACF/F-16 program, provided an interesting perspective and give added credence to research findings and recommendations.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOML  
AD-A072 553 14/1 5/1 15/5

CAVER (TROY V) DOVER NJ

Inhibitors to the Use of Life Cycle  
Costing: Results of a Survey of Military/  
Industrial Managers, (U)

AUG 79 27P Caver, Troy V. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Military  
procurement, \*Logistics management, Policies, Long  
range(Time), Decision making, Department of  
Defense, Cost models, Regulations, Standards (U)

This study was undertaken in an attempt to determine the reasons for limited use of life cycle costing in material management. The author, while a member of Training and Doctrine Command in Combat Developments for six years and then in project management activities for the next two years, saw a great divergence of opinion in the use of life cycle costing. The decision makers in TRADOC were considering long range cost to the government in their Cost and Operational Effectiveness Analysis (COEA). DoD policy makers were praising life cycle cost as a decision criteria. The Defense Systems Management College taught life cycle cost as the primary consideration for long term logistic decisions, yet the project management personnel appear to be lacking in how and when to apply life cycle cost techniques. It was apparent to the author that this was a wide spread problem which would result in continued higher long term cost to the government unless an acceptable cost criteria could be established by DoD and provided to decision makers as implementing guidance. This study examined the attitudes of DoD policy makers, DoD project managers, and industry project managers toward life cycle costing and their perception of the guidance and criteria in its implementation. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A072 355 9/2 5/1 12/1

ALFRED P SLOAN SCHOOL OF MANAGEMENT CAMBRIDGE MASS CENTER  
FOR INFORMATION SYSTEMS RESEARCH

A Normative Cost-Benefit Analysis of the  
Systematic Design Methodology. (U)

DESCRIPTIVE NOTE: Technical rept.,

MAY 79 73P Huff, S. L. ;

REPT. NO. CISR-P010-7905-1v. CISR-TR-10  
CONTRACT: N00039-73-G-0160

UNCLASSIFIED REPORT

DESCRIPTORS: \*Information systems, \*Cost analysis,  
\*Benefits, \*Computer programming, Systems  
analysis, Decomposition, User needs, Requirements,  
Functional analysis, Decision making,  
Optimization, Numerical methods and procedures,  
Computer architectures, Mathematical models,  
Integrated systems, Planning (U)  
IDENTIFIERS: SDM(Systematic Design Methodology),  
Design, \*Systems design, Complex systems (U)

Complex design problems are characterized by a multitude of competing requirements. System designers, finding the scope of the problem beyond their conceptual abilities, frequently cope with this difficulty by decomposing the original design problem into smaller, more manageable sub-problems. Functional requirements form a key interface between the system's users and its designers. This report proposes a systematic approach for the decomposition of the overall set of functional requirements into sub-problems to form a design structure that will exhibit the key characteristics of good design: strong coupling within sub-problems, and weak coupling between them. Recent work in the Systematic Design Methodology (SDM) project has led to certain extensions to the basic representational model. This report presents a normative cost-benefit analysis of the SDM. It is a decision support methodology for aiding a software designer in determining an optimal structuring of a system's functional requirements. A model-oriented, normative cost/benefit analysis of the SDM is presented. A set of three sub-models, pertaining to specification impact, procedural design impact, and maintenance/modification impact, are derived. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 352 5/3 15/3

VERTEX CORP ROCKVILLE MD

Methodology to Quantify the Potential Net  
Economic Consequences of Increased NATO  
Commonality, Standardization and Specialization.  
Volume III.

(U)

DESCRIPTIVE NOTE: Final rept..

OCT 78 143P Greenwood, David ; Klotz,

Benjamin P. ; Smith, T. Arthur ; Hartley, Keith ;

Pettijohn, William C. ;

CONTRACT: MDA903-78-C-0166

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with  
Management Analysis, Inc., Bethesda, MD. See  
also Volume I, AD-A072 348.

DESCRIPTORS: \*Economic analysis, \*Cost analysis,  
Tactical weapons, NATO, Military budgets,  
Economic warfare, International relations,  
Political alliances, Production control,  
Standardization, Specialization, Methodology,  
Cost overruns

(U)

IDENTIFIERS: Cost benefits

(U)

This Technical Report describes a methodology  
for examining potential cost savings to the NATO  
community through standardization and/or  
specialization in weapons systems procurement. The  
methodology is one of comparative cost analysis and  
specifically establishes procedures for comparing  
program costs for alternative weapon system buys  
under two or more competing procurement strategies.  
Five procurement strategies are considered. Four  
alternatives were defined prior to contract start and  
selected by the COTR. The Fifth, termed  
'National Initiative,' was developed to provide a  
base case. Initial consideration of the problem  
posed showed that potential cost savings should be  
identified early in the development stage. This led  
to a decision to structure the methodology by major  
subsystems since conventional cost estimating  
techniques permit estimating based on performance  
characteristics, and these may be the only  
distinguishing features in the early development  
stage.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 351 5/3 15/3

VERTEX CORP ROCKVILLE MD

Methodology to Quantify the Potential Net  
Economic Consequences of Increased NATO  
Commonality, Standardization and Specialization.  
Volume II, Appendix II.

(U)

DESCRIPTIVE NOTE: Final rept..

OCT 78 32P Greenwood, David ; Klotz,

Benjamin P. ; Smith, T. Arthur ; Hartley, Keith

; Pettijohn, William C. ;

CONTRACT: MDA903-78-C-0166

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with C and  
L Associates, Inc., Potomac, Md. See also Volume  
3, AD-A072 352.

DESCRIPTORS: \*Economic analysis, \*Cost analysis,  
Tactical weapons, Weapon systems, Military  
budgets, Production control, Standardization,  
Specialization, Policies, Economic warfare, Cost  
overruns, NATO, International relations, Political  
alliances

(U)

IDENTIFIERS: Cost benefits

(U)

This study surveys the literature on scale  
economies and learning in production to develop the  
basic information needed to assess the potential cost  
savings resulting from a rationalization and  
reshuffling of weapons production to the nations with  
the lowest cost of production. That is, a framework  
is constructed to measure the savings from  
specialization and division of labor in the  
production of military products.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 350 5/3 15/3

VERTEX CORP ROCKVILLE MD

Methodology to Quantify the Potential Net  
Economic Consequences of Increased NATO  
Commonality, Standardization and Specialization.  
Volume II. Appendix I.

(U)

DESCRIPTIVE NOTE: Final rept.,

OCT 78 95P Greenwood, David ; Klotz,

Benjamin P. ; Smith, T. Arthur ; Hartley, Keith ;  
Pettijohn, William C. ;

CONTRACT: MDA903-78-C-0166

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with C and  
L Associates, Inc., Potomac, MD. See also Volume  
2, Appendix 2, AD-A072 351.

DESCRIPTORS: \*Economic analysis, \*Cost analysis,  
Tactical weapons, Standardization, Specialization,  
Production control, NATO, International relations,  
Military budgets, Cost overruns, Policies,  
Political alliances, Methodology, Industrial  
production

IDENTIFIERS: Cost benefits

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Standardization is believed to offer major cost  
savings, but there are few published studies which  
provide any evidence. This study concentrates on  
the possible savings from standardization in weapons  
production. The military benefits and the savings  
in operating costs are not considered. Such savings  
could be substantial. This paper reviews the  
available evidence from industrial economics and  
international trade studies to see whether it  
provides any insights into the magnitude of the  
possible gains from weapons standardization in  
production.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 349 5/3 15/3

VERTEX CORP ROCKVILLE MD

Methodology to Quantify the Potential Net  
Economic Consequences of Increased NATO  
Commonality, Standardization and Specialization.  
Volume II.

(U)

DESCRIPTIVE NOTE: Final rept.,

OCT 78 184P Greenwood, David ; Klotz,

Benjamin P. ; Smith, T. Arthur ; Hartley, Keith ;  
Pettijohn, William C. ;

CONTRACT: MDA903-78-C-0166

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with C and  
L Associates, Inc., Potomac, MD. See also Volume  
2, Appendix 1, AD-A072 350.

DESCRIPTORS: \*Economic analysis, \*Cost analysis,  
Tactical weapons, Military doctrine, NATO,  
Production control, Policies, Political alliances,  
International relations, Standardization,  
Specialization, Military budgets, Economic  
warfare, Cost overruns

IDENTIFIERS: Cost benefits

(U)

(U)

Contents: Context and Approach -- The policy  
context. The analytical approach: The Budgetary  
Setting -- Procurement in selected NATO  
countries' budgets. National armaments plans for  
the 1980s and beyond: Production Economies --  
Estimating production economies (1) Basic  
concepts and methods. Estimating production  
economies (2) Empirical evidence reviewed, and  
Scale economies, learning and international  
competitiveness: Acquisition Methods and their  
budgetary impact -- Alternatives and assessed  
savings.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 348 5/3 15/3

VERTEX CORP ROCKVILLE MD

Methodology to Quantify the Potential Net  
Economic Consequences of Increased NATO  
Commonality, Standardization and Specialization.  
Volume I.

(U)

DESCRIPTIVE NOTE: Final rept.,  
OCT 78 46P Greenwood, David ; Hartley,  
Keith ; Klotz, Benjamin ; Pettijohn, William ;  
Smith, T. Arthur ;  
CONTRACT: MDA903-78-C-0166

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A072  
349.

DESCRIPTORS: \*Economic analysis, \*Cost analysis,  
Tactical weapons, Weapon system effectiveness,  
NATO, Production control, Political alliances,  
International relations, Standardization,  
Specialization, Industrial production, Economic  
warfare, Cost overruns, Methodology  
IDENTIFIERS: Cost benefits

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(U)

This study defines and demonstrates interrelated  
methodologies for estimating the costs of cooperative  
NATO weapons systems production programs for (a)  
individual programs (the MICRO methodology) and (b)  
NATO Alliance member nations (the MACRO  
methodology). The MICRO methodology is based on  
standard cost estimating techniques and requires  
detailed input data concerning production factors.  
The MACRO methodology relies on production data  
from analogous industrial activities in combination  
with gross expected major system acquisitions to  
estimate gross economies available to the Alliance  
from utilization of least cost production option.  
Cost estimates derived by both MICRO and MACRO  
methodologies are for demonstration purposes only.  
(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A072 310 5/1 17/7 14/1

ARINC RESEARCH CORP ANNAPOLIS MD

LCC/DTC tasks Conducted for GPS Army User  
Equipment.

(U)

DESCRIPTIVE NOTE: Summary rept. Oct 75-30 Jun 79.  
JUN 79 15P Nelson, R. R. ; Schaefer, J.  
N. ;  
REPT. NO. 1172-02-6-1930  
CONTRACT: F04701-76-C-0028

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Global positioning  
system, Design to cost, Scheduling, Mathematical  
models, Cost estimates, Army equipment

(U)

This report describes tasks related to life  
cycle cost/design-to-cost support of the Army user  
equipment development for the Global Positioning  
System. The tasks included life cycle cost  
modeling, review of development contractor cost data,  
analysis of program schedule and cost risks,  
generation of cost estimates for the Army's Cost  
and Operational Effectiveness Assessment, and  
support for the preparation of the user equipment  
Baseline Cost Estimate for ASARC II and  
DSARC II presentation.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A071 473 13/10 5/1

CENTER FOR NAVAL ANALYSES ALEXANDRIA VA

Maintenance Costs of Complex Equipment. (U)

DESCRIPTIVE NOTE: Professional paper.  
DEC 78 25P Sherman, Allan ; Horowitz,  
Stanley A.;  
REPT. NO. CNA-PP-244

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval vessels. \*Maintenance  
management. \*Naval equipment. Cost analysis.  
Downtime. Repair. Operations research.  
Deterioration. Naval training (U)

IDENTIFIERS: Maintenance of complex equipment (U)

One of the chief responsibilities of Navy managers is the material condition of ships in the fleet. They must be aware of equipment deterioration and must decide how to best allocate resources to reduce equipment downtime, thereby reducing maintenance costs and improving the material condition of the fleet. Among the questions this paper addresses are: How much more is complex equipment down? and Are high quality enlisted personnel more valuable in dealing with more complex equipment? The answers to these questions indicate that fleet material condition can be improved by revised personnel policies. By more precisely assigning skilled men to ships with complex equipment, the Navy could reduce equipment downtime thereby improving readiness and decreasing maintenance costs. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A071 428 13/3

FOREST PRODUCTS LAB MADISON WIS

Comparative In-Place Costs of wood and Steel Framing. (U)

DESCRIPTIVE NOTE: Forest Service research paper.  
79 44P Spelter, Henry ;  
REPT. NO. FSRP-FPL-334

UNCLASSIFIED REPORT

DESCRIPTORS: \*Structural members. \*Steel. Frames.  
Floors. Housing (Dwellings). Costs.  
Comparison (U)

The comparative in-place costs of wood and steel light residential framing were examined for the period 1970-1978. Material and labor requirements were calculated for floor, nonload-bearing partition, and load-bearing wall framing systems using Douglas-fir and southern pine lumber, and galvanized steel shapes. Material and labor costs were those prevailing in the Chicago area. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A071 110 9/5 14/1 17/9

BATTELLE COLUMBUS LABS OHIO

Standard Electronic Module Radar Life  
Cycle Cost Comparison.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jun 78-15 Jan 79,

APR 79 125P Cork, Thomas R. :

CONTRACT: F33615-78-C-1508

PRL: 6096

TASK: 42

MONITOR: AFAL TR-79-1025

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Modules(Electronics), \*Life cycle costs, Cost analysis, Meteorological radar, Avionics, Standardization, Joint military activities, Solid state electronics, Cost estimate

IDENTIFIERS: AN/APQ-122, PE62204F, WUAFAL60964204

(U)

(U)

The report presents a life cycle cost (LCC) analysis of an airborne weather radar system functionally similar to the Standard Electronic Module Radar (SEMR) and compares the LCC estimates for this system to previously developed LCC estimates for the SEMR. The SEMR has been designed, fabricated and tested as a demonstration of the concepts of the TRI-service Standard Electronic Module program. A previous study analyzed the LCC characteristics of the SEMR and developed LCC estimates for specific implementation alternatives. The APQ-122V(5) radar design was selected for LCC comparison as a representative example of solid state systems composed of custom subassemblies. The LCC analysis of a SEMR-equivalent of APQ-122 system was conducted using procedures and assumptions which were consistent with those used in the previous SEMR LCC study. Results presented in this report include a comparison of baseline LCC totals and subtotals, a comparison of the sensitivity of the two sets of LCC estimates to operational parameters, and an analysis of how the critical assumptions used in developing the SEMR equivalent APQ-122 LCC estimates affect the baseline comparison.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A071 068 13/6 15/5

ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY ABERDEEN PROVING  
GROUND MDA Comparison of Maintenance Costs and RAM  
Characteristics of New and Overhauled M35A2 2-  
1/2 Ton Trucks.

(U)

DESCRIPTIVE NOTE: Technical rept..

JAN 79 48P Bell, Raymond ; Mioduski,

Robert ; Belbot, Edward ;

REPT. NO. AVSAA-TR-251

PROJ: 1R765706WS41

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Trucks, \*Maintenance, Cost analysis, Performance(Engineering), Reliability, Maintainability, Comparison, Statistical analysis, Replacement

IDENTIFIERS: M-35 trucks, M-35A2 trucks, 2-1/2-Ton trucks, Availability, Overhauled trucks, ASS41, PE65706A

(U)

(U)

A comparison of the maintenance costs, and reliability, availability and maintainability (RAM) characteristics of new and overhauled 2-1/2 ton trucks is presented. This comparison was based on the performance of 259 new and 252 overhauled M35A2 2-1/2 ton trucks operated by the 9th Infantry Division, Ft. Lewis, Washington, over a four year period. The 511 vehicles evaluated in this study accumulated a total of 2.7 million miles with the individual new and overhauled vehicles accumulating mileage histories up to 19,000 and 11,000 miles, respectively. (Author)

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## UNCLASSIFIED

CDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 937 5/9

TECHNION - ISRAEL INST OF TECH HAIFA FACULTY OF INDUSTRIAL AND MANAGEMENT ENGINEERING

Interpretations of Task Difficulty in Terms of Resources: Efficiency, Load, Demand, and Cost Composition.

(U)

DESCRIPTIVE NOTE: Technical rept.,

NOV 78 46P Navon, David; Gopher, Daniel;

CONTRACT: AFOSR-78-3131

PROJ: 2313

TASK: A2

MONITOR: AFOSR, AFOSR 79-0828.78-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Job analysis, Processing, Performance(Human), Tracking, Resources, Allocations, Time dependence, Efficiency, Cost effectiveness, Theory, Test construction(Psychology), Israel

IDENTIFIERS: Workloads, Task analysis, Difficulty, Pursuit tracing, PE61102F, WUAFOSR2313A2

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The effect of task difficulty on performance can be conceptualized within a theory which posits that performance depends on the use of resources from a single pool. When the difficulty of a task is said to increase it may mean either that resources invested in it can now do less (i.e., a decrease in efficiency), or are now required to do more (i.e., an increase in load), or have now less time to do it (i.e., a stricter limit on processing duration). Either way, difficulty should most often interact with resource investment in such a way that effects of resource investment on quality or speed of performance are more pronounced the easier the task. If the processing system is viewed as comprised of a number of mechanisms each having its own capacity, which may be considered as a separate resource, then a difficulty manipulation may affect differentially the use of each of those capacities. If in a dual-task situation manipulation of the difficulty of one task affects the use of a mechanism which is not required by the other task, processing of the latter may remain intact under some circumstances.

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CDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 629 14/2 5/1 14/1

DYNAMIC SCIENCES INTERNATIONAL INC SEPULVEDA CA

Test Program Set Cost Algorithm.

(U)

DESCRIPTIVE NOTE: Final rept. 21 Sep 77-Apr 78.

MAY 79 69P Zinno, D. James; Robertson,

A; V. McIntyre, Dave;

CONTRACT: DAAB07-77-C-2727

PROJ: 1L762779AH62

TASK: 01

MONITOR: COPADCOM 77-2727-F-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Test equipment, \*Life cycle costs, Automatic test sets, Algorithms, Cost analysis, Learning curves, Test methods, Management engineering, Computer programs

IDENTIFIERS: \*TPS(Test Program Sets), Test management, Testability, KU011, ASH62, pe62779a

(U)

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The Test Program Set Cost Algorithm provides a methodology for identifying and quantifying the funding costs of major tasks in Test Program Sets (TPS's) development. Areas that are addressed by the study include the learning curve effect, impact of ATE maturity, impact of UUT (Unit Under Test) Testability, effect of design guides on development and life-cycle costs, management-controlled cost factors, utilization of Automatic Test Program Generation (ATPG), development costs vs. life-cycle costs, fault insertion and customer 'sell-off', and commercial vs. military support. The basic algorithm deals with the analysis, coding, checkout and sell-off of a test program set but other factors such as overhead support, interface device design, ATE compatibility, etc., are discussed. The application and usage of the algorithm should provide a valuable estimating tool to assess costs associated with Test Program Set development.

(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 092 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Decision Criteria for Cost-Plus-Award-Fee  
Contracts in Major Systems Acquisitions. (U)DESCRIPTIVE NOTE: Master's thesis.  
MAR 79 66P Jenkins, Gwilym Howard . Jr;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Contract administration, \*Costs,  
Management planning and control, Decision making,  
Allocations, Contracts, Risk, Weapon systems,  
Military procurement, Management information  
systems, Acquisition, Theses (U)

IDENTIFIERS: Cost plus award fee contracts,  
Organization theory, Project Management (U)

The Cost-Plus-Award-Fee contract has useful  
application in Major Systems Acquisition during  
the full-scale development phase. This thesis  
examines the Cost-Plus-Award-Fee contract  
with Leavitt's Organizational Theory model  
which identifies goals, technology, people,  
structure, and environment as factors for analysis.  
It further investigates cost reimbursement contract  
types versus technical risk for identification of  
those criteria, which best accommodate application of  
the CPAF contract in major systems acquisition.  
This thesis concludes that the CPAF contract can  
be viewed as an informal management information  
system to enhance project control. It summarizes  
basic strengths and weaknesses of the CPAF contract  
in major systems acquisition. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 037 5/9 5/1

TRAINING ANALYSIS AND EVALUATION GROUP (NAVY) ORLANDO  
FLA Cost Management Control Procedure for  
Initial Training in Surface Ship  
Acquisition Programs. (U)

DESCRIPTIVE NOTE: Final rept..  
MAY 79 116P Nutter, Roger V. ; Cordell,  
Curtis C. ; Heidt, Edward A. ;  
REPT. NO. TAEG-68

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval training, \*Cost analysis,  
\*Management planning and control, \*Management  
training, Decision making, Cost estimates,  
Education, Case studies, Economic analysis,  
Ships, Military training, Cost models (U)

This is the second of two reports addressing the  
alternatives available for the development of Navy  
initial training courses: i.e., contract, Navy, or  
Navy/contractor developed. The first, TAEG  
Technical Memorandum 77-5, Precommissioning  
Training, July 1977, presented a technique for  
estimating the cost of Navy developed initial  
training courses and recommended case studies of a  
representative sample of surface ship initial  
training programs to further explore the available  
alternatives. Based on this recommendation, five  
major acquisition programs were selected for study.  
Results of these studies indicated the need for a  
standard procedure for maintaining and disseminating  
historical cost and management of initial training  
data. As a result of the nine training device  
course programs sampled, a computer based cost  
management control procedure was developed. The  
procedure is designed to assist program managers in  
selecting the most efficient initial training  
alternative, preparing initial budgetary estimates,  
and performing contractor cost proposal evaluations.  
Validation and refinement of the procedure is  
required. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 020 7/3 7/1 5/3

CALLERY CHEMICAL CO PA

Design of a Facility to Implement a Low  
Cost Process for Production of NHC.

(U)

DESCRIPTIVE NOTE: Final technical rept. 16 Nov 76-31  
Oct 77.

MAY 79 317P

REPT. NO. CCC-79-66

CONTRACT: DAAK40-76-C-1256

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
 DESCRIPTORS: \*Carboranes, \*Industrial plants,  
 \*Chemical engineering, Production engineering,  
 Industrial production, Experimental design, Hexyl  
 radicals, Pilot plants, Scale models, Safety,  
 Pyrolysis, Low costs

(U)

This report and its referenced documentation  
 provide the detailed engineering design of a facility  
 for the production of 30,000 lbs/yr of n-hexyl  
 carborane (NHC). The design criteria and design  
 basis incorporate bench scale and small scale  
 production data and experience to provide a safe, low  
 cost process for conversion of diborane to decaborane  
 by a unique continuous pyrolysis process.  
 Decaborane is subsequently converted to NHC by  
 batch solution processing. Process description,  
 process flow diagrams and engineering flow diagrams  
 fully describe the production facility. Process  
 hazards are discussed and process safety features  
 described. Principal hazards are borane toxicity  
 and fire hazard of flammable materials and solvents.  
 Design implementation is outlined with  
 identification of equipment and support facilities  
 for process demonstration, demonstration and support  
 of low rate production and ultimate expansion to full  
 scale design capacity. Detailed engineering  
 drawings, specifications, calculations and other  
 design documents are listed. Listed documents are  
 maintained for record and for retrieval and usage by  
 interested parties. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 973 5/1 14/1 1/3

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
NEUILLY-SUR-SEINE (FRANCE)Methodology for Control of Life Cycle Costs  
for Avionics Systems.

(U)

DESCRIPTIVE NOTE: Lecture series.

APR 79 154P

REPT. NO. AGARD-LS-100

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at a Lecture Series  
 under the sponsorship of the Avionics Panel and the  
 Consultant and Exchange Programme of AGARD, Bonn,  
 Germany, C. R. 7-8 May 79 and Athens, Greece 10-  
 11 May 79.

DESCRIPTORS: \*Life cycle costs, \*Management planning  
 and control, \*Avionics, Cost analysis,  
 Methodology, Cost estimates, Parametric analysis,  
 Systems engineering, Reliability(Electronics),  
 Military aircraft, Military procurement, Logistics  
 support, Trade off analyses, Risk

(U)

IDENTIFIERS: NATO furnished

(U)

Contents: Introduction to Methodology for  
 Control of Life Cycle Costs for Avionics  
 Systems: Life Cycle Cost Analysis --  
 Concepts and Procedures, The Development and  
 Implementation of Life Cycle Cost  
 Methodology: Recent Experience in the  
 Development and Application of Life Cycle  
 Cost Models: and Problems in the  
 Investigation of Reliability-associated Life-  
 cycle Costs of Military Airborne Systems.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 968 6/8

ARMY NATICK RESEARCH AND DEVELOPMENT COMMAND MA FOOD  
ENGINEERING LAB

Cost of Irradiating Bacon and the Associated  
Energy Savings.

(U)

DESCRIPTIVE NOTE: Technical rept..

MAR 79 12P Brynjolfsson, Ari :

REPT. NO. NATICK/FEL-89

PROJ: 1L162724AH99

TASK: DA

MONITOR: NATICK TR-79/022

UNCLASSIFIED REPORT

DESCRIPTORS: \*Irradiated food. \*Cost analysis.  
\*Bacon. Sterilization. Freezing. Nitrites.  
Energy conservation. Test and evaluation.  
Acceptance tests

IDENTIFIERS: PE62724A, ASH99, WU010

(U)

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This paper is about costs and energy savings obtained by irradiating bacon. Sterilized by irradiation (25 kGy), bacon without added nitrite does not contain nitrosamines and does not constitute botulism hazard. If bacon is irradiation sterilized while refrigerated, the cost of irradiation is about \$0.08/lb; if irradiation-sterilized while frozen, the costs of irradiation and freezing would be about \$0.03/lb. Substerilizing irradiation doses of 7.5 to 15 kGy would give about 80 days extension of bacon stored and distributed refrigerated. The irradiation costs, in this case, would be about \$0.07/lb. (Author)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 791 5/1 5/9

CONRAD RESEARCH CORP PITTSBURGH PA

Cost Analysis of Air Force On-the-Job  
Training: Development and Demonstration of a  
Methodology.

(U)

DESCRIPTIVE NOTE: Final rept. 20 Aug 76-25 Jul 78.

MAY 79 231P Eisele, Charles R. ; Bell,

Thomas R. ; Laidlaw, Charles D. ;

CONTRACT: F33615-76-C-0063

PROJ: ILIR

TASK: 00

MONITOR: AFHRL TR-78-88

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis. \*Air Force training.  
\*Job training. Cost estimates. Systems analysis.  
Personnel management. Careers. Reliability

IDENTIFIERS: WUAFHRLILIR0052, PE61101F

(U)

(U)

The Air Force on-the-job training (OJT) cost estimating methodology documented in this report is applicable to formal airman upgrade training to the 3, 5, and 7 skill levels. The methodology can be used to provide reasonable cost estimates for budgeting and planning purposes at various command levels and for various time intervals. Design of the methodology has emphasized use of existing data bases to derive direct OJT costs. Cost elements which have been quantified include program overhead costs at all command levels, personnel time cost for actual training and supervision, and program support costs such as for career development courses and the Extension Course Institute. Recommendations have been made concerning equipment and opportunity costs. The methodology employs additive cost factors which are sensitive to OJT cost variation among career fields and among organizations at each command level. Periodic factor reestimation will insure cost factor currency allowing OJT cost forecasts driven by forecasted OJT trainee-month volumes. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 763 5/2 14/1

ILLINOIS UNIV AT URBANA-CHAMPAIGN COORDINATED SCIENCE  
LAB

An Analysis of Storage, Retrieval, and  
Update Costs for Data Bases which are  
Tables of Entries.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 78 63P Warner, Mark Kenneth ;  
REPT. NO. R-816, UIU-ENG-78-2209  
CONTRACT: DAAB07-72-C-0259, NSF-ENG-75-20864

UNCLASSIFIED REPORT

DESCRIPTORS: \*Data management, \*Data storage  
systems, Information retrieval, Cost analysis,  
Tables(Data), Information theory, Data bases,  
Computer applications, Machine coding, Theses  
IDENTIFIERS: Trees(Mathematics)

(U)

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The performance of retrieval systems for tables of  
entries is investigated. The system costs  
considered are the cost of storing a representation  
of a table, the cost of retrieving an individual  
table entry, and the cost of updating the table by  
adding or deleting the last entry. Several systems  
are presented and their costs are analyzed. For  
each type of cost a lower bound is derived, though in  
some cases it is for a restricted situation (such as  
for bounded table size). It is found for the  
problem presented that the actual storage cost and  
the lower bound on storage cost are both on the order  
of  $lw \lg(l)$ , where  $l$  is the number of entries in the  
table and  $w$  is the entry size. The bounds on both  
retrieval cost and update cost are found to be on the  
order of  $w$ , while the actual costs of the best  
systems presented are on the order of  $w \lg(l)$ .  
(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 527 16/4.1 5/1 15/5

ADMINISTRATIVE SCIENCES CORP FALLS CHURCH VA

Navy Air-Launched Missile Operating and  
Support Cost Estimating Model.

(U)

APR 79 192P Heilig, Paul T. ;  
REPT. NO. ASC-R-118  
CONTRACT: N00014-77-C-0180

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air to air missiles, \*Cost models,  
Cost estimates, Logistics support, Maintenance,  
Naval training, Naval equipment

(U)

The Cost Analysis Improvement Group  
(CAIG), which is responsible for policy and  
guidance for cost analysis in the Department of  
Defense, issued a memorandum which contained an  
operating and support cost element structure (CES)  
for tactical air-launched missiles, to be used in  
all Defense System Acquisition Review  
Council reviews and other missile cost analyses.  
Accordingly, the Resource Analysis Group  
(Op-96D), which is responsible for independent  
cost analysis within the Navy, tasked  
Administrative Sciences Corporation to  
undertake a study. The CES which was developed  
contains sixteen cost elements which define and  
encompass the same activities described in the CAIG  
memorandum. Each cost element is discussed in  
detail in the body of this report. All pertinent  
data which was collected during the study is  
included, as well as examples of Navy documents  
which can be used for cost estimating in the future.  
Each source is identified by a point of contact and  
a DOD telephone number. All explanatory variables  
which were employed in the study, whether used in a  
cost-estimating relationship or not, are also  
included.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 389 5/1 15/5

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OH

Design to Cost (DTC) Implementation Guidance.

(U)

JAN 78 21P Menker, Lavern J. ; Mills, Brian S. ;

UNCLASSIFIED REPORT

DESCRIPTORS: •Design to cost, Contracts, Life cycle costs, Logistics management

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 388 5/1 15/5

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OH

Life Cycle Cost Management Guidance for Program Managers.

(U)

DESCRIPTIVE NOTE: 4TH EDITION.

JUL 78 34P Gibson, John D. S. ; Mills, Brian S. ;

UNCLASSIFIED REPORT

DESCRIPTORS: •Life cycle costs, Management, Logistics management

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0X07

AD-A069 212 5/3 12/2

HARVARD UNIV CAMBRIDGE MASS

Pareto Efficiency with Costly Transfers.

(U)

DESCRIPTIVE NOTE: Technical rept..

MAY 79 20P Arrow, Kenneth J. :

REPT. NO. TR-33

CONTRACT: N00014-76-C-0135

UNCLASSIFIED REPORT

DESCRIPTORS: \*Economic models. Efficiency.  
Distribution. Resources. Allocations. Decision  
making. Costs. Transfer  
IDENTIFIERS: \*Pareto allocations. wun-47004

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The concept of Pareto efficiency, as ordinarily applied, implies that costless redistributive transfers are possible. This paper generalizes the concept to a simple case where transfers of a given good involve losses measurable in that good. The Pareto efficiency of a given allocation then depends on the initial distribution endowments. For a given allocation, then, we can ask: (1) whether there exists any endowment allocation for which the given allocation is Pareto efficient; and (2) if there is, what is the class of endowment allocations for which it is efficient. These questions are answered in the paper.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0X07

AD-A069 120 5/1 13/10

KATZ (EDWARD M) AND ASSOCIATES INC WASHINGTON DC

Forms of Ownership and a Cost-Effective  
Shipbuilding Industry.

(U)

DESCRIPTIVE NOTE: Final rept. Sep 78-May 79.

MAY 79 106P

REPT. NO. EMK-79-1

CONTRACT: N00014-78-C-0669

UNCLASSIFIED REPORT

DESCRIPTORS: \*Shipbuilding. \*Shipyards.  
\*Management. Cost effectiveness. Industries.  
Regulations. Public utilities. Naval vessels.  
Costs. Japan. Western Europe. United States.  
Government(Foreign). Finance. Efficiency  
IDENTIFIERS: Nationalization. Private industry.  
Ownership

(U)

(U)

This study reviews and analyzes the potential impact on shipyard efficiency of the three modes of ownership possible in the United States: a fully nationalized shipbuilding industry, an industry organized as a public utility, and a privately owned and conventionally financed industry. Particular emphasis was given to analysis of the potential for creating a shipbuilding public utility since it was initially believed that the scope and content of the regulations imposed on a utility might help to induce a more cost-effective industry. This, indeed, is the main concern of this project--the least cost construction of naval combatants. Based upon their analysis, the writers believe that changing the mode of ownership of the industry or its capital structure will not, by itself, solve the underlying problem. Their analysis suggests that cost control is a management function distinct and apart from the ownership function, and should be so treated. In this regard, their analysis now suggests that either nationalizing the industry or creating a shipbuilding utility as opposed to the continuing private ownership of the industry may serve to increase shipbuilding costs both in the short- and long-term.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 993 5/3 12/1

TEXAS UNIV AT AUSTIN CENTER FOR CYBERNETIC STUDIES

Transforms and Approximations in Cost and  
Production Function Relations.

(U)

DESCRIPTIVE NOTE: Research rept..

MAR 79 25P Charles, A. ; Cooper, W. W. ;

Schinnar, A. P. ;

REPT. NO. CCS-339

CONTRACT: N00014-75-C-0616, N00014-75-C-0569

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by N00014-75-C-  
0932 and NSF-S0C76-15876.

DESCRIPTORS: \*Economic analysis. Cost analysis.  
Decision making. Efficiency. Fourier  
transformation. Laplace transformation.  
Approximation (Mathematics). Production

(U)

IDENTIFIERS: \*Production Functions. \*Economic  
Models. Duality Theory. W0NR047021

(U)

Process analysis and related approaches to the  
study of energy economics have made extensive use of  
Shephard's lemma as well as other aspects of the  
Shephard-Samuelson transformation theories. A  
major problem is shown to be present in the use of  
these transforms to go from cost functions to  
production possibility sets in that the latter will  
always be unbounded above. Capacity conditions,  
which are especially important in energy policy  
studies, are therefore not adequately addressed.  
Troubles also occur in the use of translog  
approximations because of the functional forms which  
can result when the Shephard-Samuelson  
transformations are employed. Nondifferentiability  
is not the primary difficulty with the translog  
approximations as is shown with an infinitely  
differentiable function. Relations between other  
parts of mathematical transform theory, e.g. as  
exhibited in Laplace transforms, are also indicated  
along with possible extensions that might be made in  
the Shephard-Samuelson 'duality' theories.  
(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 721 1/3 15/5 14/1

ROCKWELL INTERNATIONAL EL SEGUNDO CA LOS ANGELES DIV

Aircraft Transparency Failure and Logistical  
Cost Analysis. Volume III. Transparency  
Analysis.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 77-Sep 78.

DEC 78 215P Brown, S. S. ;

REPT. NO. NA-75-604-VOL-3

CONTRACT: F33615-77-C-3060

PROJ: 2402

TASK: 03

MONITOR: AFFDL TR-78-153-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume I. AD-A068  
719.

DESCRIPTORS: \*Aircraft canopies. \*Windscreens.  
\*Windows. \*Transparent panels. \*Life cycle costs.  
Aircraft maintenance. Logistics support. Repair.  
Replacement. Trade off analyses. Maintainability.  
Reliability. Cost effectiveness. Data bases.  
Regression analysis

(U)

IDENTIFIERS: PE62201F. W0AFFDL2402302

(U)

The Rockwell Maintenance Analysis Model  
(WAM) program was used to extract cost data from  
the M051 LSC system, and maintenance failure modes  
from the AFM 66-1 maintenance data collection  
system in order to conduct a detailed logistical cost  
and failure analysis. The cost and maintenance  
frequencies were utilized to pinpoint the most  
productive areas for life cycle cost reduction. A  
number of potential improvement studies were  
identified in the initial phase of this program.  
However, the effort required to research, analyze,  
and assemble these data, limited the development to  
five design improvement studies. These factors,  
coupled with the relative importance of the aircraft  
in the Air Force inventory, initiated the search  
for concepts that would cure or substantially reduce  
the failures identified in the above noted WAM's  
process. The verification of the feasibility of the  
proposed changes was accomplished by trading the  
projected 10-year life cycle cost of the existing  
concept to the costs of the development.

(U)

AD-A068 721



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 720 1/3 15/5 14/1

ROCKWELL INTERNATIONAL EL SEGUNDO CA LOS ANGELES DIV

Aircraft Transparency Failure and Logistical  
Cost Analysis. Volume II. Design Data and  
Maintenance Procedures.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 77-Sep 78.

DEC 78 152P Brown, S. S. ;

REPT. NO. NA-78-604-VOL-2

CONTRACT: F33615-77-C-3060

PROJ: 2402

TASK: 03

MONITOR: AFFDL TR-78-153-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, AD-A068  
721.DESCRIPTORS: \*Aircraft canopies. \*Windshields.  
\*Windows. \*Transparent panels. \*Life cycle costs.  
Aircraft maintenance. Logistics support. Repair.  
Replacement. Trade off analyses. Maintainability.  
Reliability. Cost effectiveness. Data bases  
IDENTIFIERS: PE62201F, WUAFFDL24020302

(U)

The aircraft transparency and logistical cost analysis program is aimed at reducing the logistical costs associated with transparency systems for 20 of the current Air Force inventory aircraft. The approach for achieving this goal was to collect all information relating to the physical and performance characteristics and maintenance historical data of the selected study aircraft. These data provide the means of initiating search for design improvement and cost reduction studies. In order to assess the maintenance and logistical support activity as currently being practiced at the Air Logistics Centers and Air Force Operational Bases, both maintenance and installation procedures, as well as qualification and testing procedures, for transparency components and support systems were collected. These data were assembled to determine the support structure level of effort and costs to identify those procedures and practices where cost reduction may be achieved.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 719 1/3 15/5 14/1

ROCKWELL INTERNATIONAL EL SEGUNDO CA LOS ANGELES DIV

Aircraft Transparency Failure and Logistical  
Cost Analysis. Volume I. Program  
Summary.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 77-Sep 78.

DEC 78 68P Brown, S. S. ;

REPT. NO. NA-78-604-VOL-1

CONTRACT: F33615-77-C-3060

PROJ: 2402

TASK: 03

MONITOR: AFFDL TP-78-153-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A068  
720.DESCRIPTORS: \*Aircraft canopies. \*Windshields.  
\*Windows. \*Transparent panels. \*Life cycle costs.  
Aircraft maintenance. Logistics support. Repair.  
Replacement. Trade off analyses. Maintainability.  
Reliability. Cost effectiveness. Data bases  
IDENTIFIERS: PE62201F, WUAFFDL24020302

(U)

The concern for increasing costs in the maintenance of transparency systems has prompted the Air Force Flight Dynamics Laboratory to sponsor this study contract. The objective of this study is to identify the high-cost, high-maintenance transparency components, identify cause of failures, and recommend corrective programs to reduce cost of ownership to the Air Force Logistics Command. The study involved the review of 20 selected aircraft in current Air Force inventory to establish an extensive data base relating to transparency maintenance activity and associated logistical support costs. During this study, a collection of detailed design characteristics, methods of construction, test and qualification, and costing information was assembled. From these data, the basis for design improvements were determined. The approach used in the identification of candidate improvements was to focus on the high-cost contributors to maintenance and repair.

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AD-A068 719

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 699 1/3 15/5 9/2

DAYTON UNIV OHIO RESEARCH INST

Predicts Crack Repair Costs for Aircraft Structures.

(U)

DESCRIPTIVE NOTE: Final technical rep. Jun 77-Sep 78.  
 NOV 78 83P Berens, Alan P. ;  
 CONTRACT: F33615-77-C-0800  
 MONITOR: ASD TR-78-39

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Airframes, \*Cracking(Fracturing),  
 \*Repair, \*Computer programs, Cost analysis,  
 Mathematical prediction, Crack propagation,  
 Operational readiness, User needs, Specifications,  
 Air Force operations, Data acquisition,  
 Maintenance management, Flight testing

(U)

This report presents the results of a study designed to (1) prepare a computer program for use in predicting expected repair costs of the cracks which develop during the operational usage of a structure; (2) to provide a document which describes the use of the computer program and guides a potential user in the specification of the required input; and (3) to use data which is reasonably representative of Air Force experience as input for use in determining the sensitivity of expected maintenance costs to variations in input. Results are provided which compare expected costs for changes in inspection intervals, quality of inspection, quality of repair, operational usage, and equivalent initial flaw size distributions. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 577 6/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Cost-Performance Relationships for Use with the Uniform Chart of Accounts for Military Medical Treatment Facilities.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
 MAR 79 13EP Olson, Steven Duane ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost effectiveness, \*Health care facilities, \*Military medicine, Medical services, Department of Defense, Accounting, Output, Measurement, Costs, Cost analysis, Hospitals, Theses

(U)

This study was an attempt to identify those attributes characteristic of a suitable measure, suggest cost-performance relationships which are capable of being supported by the uniform chart of accounts, and test these relationships with data from the ten military sites selected to test the chart of accounts. Based upon the analysis, a recommendation as to the suitability of the relationships as a basis for comparisons was made. Finally, recommendations which may improve the utility of the uniform chart of accounts were also offered.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 537 15/5 5/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A Lease versus Buy Decision Methodology for  
the Army: A Proposal. (U)

DESCRIPTIVE NOTE: Master's thesis.  
MAR 79 85P Clifton, Herbert Charles :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army procurement, \*Leasing,  
\*Decision making, Cost analysis, Economics,  
Methodology, Mathematical models, Theses  
IDENTIFIERS: Cost benefit analysis (U)  
(U)

The Army currently does not have a prescribed uniform methodology to determine the lease versus buy financing of items procured from private industry. Also, when lease versus buy decisions have to be made, the decision is often a separate one after the system has been chosen by a cost-benefit analysis. Discount rate, salvage value, tax rates, depreciation, and risk are all elements that directly affect the lease versus buy determination in both industry and government transactions. However, total agreement as to the application of these elements to the final decision is lacking within the Army. Based on the literature available, a lease versus buy methodology is determined. Also, it is shown how this method should be part of a one step cost-benefit analysis instead of a two step method to be used by the Army when leasing is a viable financing alternative. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 268 17/7 14/1

ARINC RESEARCH CORP ANNAPOLIS MD

Avionics Cost Development for Use of  
Loran-C Navigation Systems By Low  
Performance General-Aviation Aircraft. (U)

DESCRIPTIVE NOTE: Final rept..  
APR 79 25P Kowalski, S. H. :  
REPT. NO. 1326-01-8-1906  
CONTRACT: DOT-FA76WA-3788

UNCLASSIFIED REPORT

DESCRIPTORS: \*LORAN, \*Cost effectiveness,  
Avionics, Cost estimates, Methodology, Global  
positioning system, Systems engineering (U)  
IDENTIFIERS: \*LORAN-C (U)

This avionics cost study of the Long-Range Navigation (LORAN-C) system used by low-performance general-aviation aircraft, performed for the Federal Aviation Administration (FAA) Office of Systems Engineering Management (OSEM), was based on a uniform approach to cost estimating with the assistance of a pricing model. The system evaluated is the Teledyne IDL-711 LORAN Micro-Navigator, with appropriate design and packaging modifications to meet the less stringent environmental and packaging requirements of general aviation. The LORAN-C system in its airborne configuration requires a receiver, a control and display unit, and an antenna with a built-in coupler. The expected costs of the avionics required by single- and light-twin-engine aircraft were developed by using a parametric cost-estimating model. These costs, shown in Table S-1, are in 1977 dollars, without inflation, and are based on annual production quantities of 1,000 units. Development costs were amortized over a 3,000-unit production quantity. The 1977 dollars were used to facilitate comparison with other cost results of alternative navigation systems previously evaluated by ARINC Research for the FAA. (Author) (U)

AD-A068 268



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A068 175 5/1 9/2 1/3

ADMINISTRATIVE SCIENCES CORP FALLS CHURCH VA

Naval Aircraft Operating and Support Cost-  
Estimating Model - FY77 Revision.

(U)

FEB 79 200P  
REPT. NO. ASC-R-120  
CONTRACT: N00014-77-C-0180

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of Rept. no. ASC-R-116  
dated Mar 78, AD-A053 180.DESCRIPTORS: \*Cost estimates, \*Naval aircraft,  
Computerized simulation, Computer program  
documentation, Life cycle costs, Parametric  
analysis, Regression analysis, Data bases,  
Instruction manuals, Management information systems,  
Flight crews, Maintenance, Logistics support,  
Airframes

(U)

In fiscal 1974, Administrative Science Corp. developed a parametric cost-estimating model which has been updated and documented several times and used to support numerous Defense Systems Acquisition Review Council (DSARC) reviews as well as other cost reviews. This report provides a detailed documentation of the cost-estimating relationships (CER's) developed from FY77 data. In addition, the report has been significantly enhanced in order to serve as a handbook and training aid for Op-96D aircraft analysts. For each cost element in the structure, this report provides: (1) a definition; (2) discussion of the definition and other aspects of how, where, and why these costs are incurred, points of contact including organizational codes and telephone numbers, historical data, and sources for planning data; (3) cost-estimating relationship, including all computational procedures, regression statistics for the CER, and the data base; (4) an alternative CER (in many cases) with the same detail as above; and, (5) an example calculation.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 997 11/6 5/3

ROCKWELL INTERNATIONAL EL SEGUNDO CA LOS ANGELES DIV

Lower Cost by Substituting Steel for  
Titanium.

(U)

DESCRIPTIVE NOTE: Final rept. Aug 75-Oct 78.  
NOV 78 447P Parker, D. E. : Bennett, G.  
V. ; Robelloto, R. P. ;  
REPT. NO. RI/LAO/NA-78-415  
CONTRACT: F33615-75-C-3109  
MONITOR: AFFDL TR-78-186

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Steel, \*Titanium alloys, \*Industrial  
production, Cost analysis, Airframes, Fabrication,  
Technology transfer, Heat treatment, Machining,  
Fracture (Mechanics), Stress corrosion,  
Tolerances (Mechanics), Weight reduction  
IDENTIFIERS: Titanium alloy 6Al 4V(U)  
(U)

This program was part of an overall program to develop a high-strength steel, designated AF1410, which compares favorably with titanium in strength/weight efficiency and fatigue characteristics and yet can be produced at a significant reduction in cost. The Rockwell portion of the overall program consisted of selecting existing candidate designs, developing steel substitute designs, and comparing their estimated cost with their titanium counterparts. It also consisted of development of heat-treat processes to optimize machinability and of a comprehensive materials test program. Finally, the program included the machining of a full-scale test article from a forging provided by the Air Force from another portion of the program, and the fatigue, damage tolerance, and static residual strength testing of the full-scale article. In addition, validation of the production cost reduction was a prime objective. During testing, cracks developed which were subsequently analyzed as being the result of excessive deflections. An in-test repair was accomplished, and the testing was successfully completed. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 949 5/1 15/5

NOTRE DAME UNIV IN DEPT OF MARKETING

Transportation Costs as a Consideration in  
Air Force Contracts.

(U)

DESCRIPTIVE NOTE: Final rept. 15 Aug 78-30 Apr 79.  
MAR 79 161P Stock, James R. ;  
CONTRACT: F33615-78-C-5200

## UNCLASSIFIED REPORT

Availability: Document partially illegible.

DESCRIPTORS: \*Transportation, \*Contract  
administration, \*Cost analysis, Methodology, Air  
force equipment, Regulations, Costs, Air force  
procurement, Standardization

(U)

IDENTIFIERS: FOB origin costs, FOB destination  
costs

(U)

Basically, the transportation decision coupled with the service constraints (priority and sensitivity) of the item (s) being transported. With this understanding, the scope of the research study was determined to include: the identification of relevant transportation costs involved in Government-sponsored and/or contractor-sponsored carriage; the development of a methodology for identifying and evaluating F.O.B. origin versus F.O.B. destination alternatives; and to determine the feasibility of applying economic criteria to the transportation decision. Assuming various environments to test the sensitivity of the estimate of the cost components of the F.O.B. terms of shipment decision, several conclusions were reached: (1) A significant number of Air Force contracts could be awarded F.O.B. origin in lieu of F.O.B. destination; (2) The basic cost components which must be considered when comparing F.O.B. origin and F.O.B. destination terms of shipment include carrier rates, transportation administration expense, claims administration expense, contractor surcharge and destination change (ASI) costs; and (3) Significant dollar savings might be involved in utilizing F.O.B. origin terms of shipment in lieu of F.O.B. destination terms.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 882 9/2 14/1 9/3

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND FORT  
BELVOIR VA NIGHT VISION AND ELECTRO-OPTICS LABSLife Cycle Cost Analysis Model. Part I.  
The Mathematical Model.

(U)

DESCRIPTIVE NOTE: Research and development technical  
rept.,MAR 79 49P Sirota, David B. ;Morrow,  
Walter B. , Jr.; Skelton, Jerry P. ;Sijgers,  
Henry K. ;

REPT. NO. DELNV-TR-0004

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computerized simulation \*Life cycle  
costs, \*Electronic equipment, Cost analysis,  
Economic analysis, Computer programs, Investments,  
Electronics, Electrooptics, Infrared equipment,  
Night sights, Light emitting diodes, Arrays,  
Remotely piloted vehicles

(U)

IDENTIFIERS: CDC 6600 computers, AN/VSG-2, AN/  
TAS-6

(U)

PART I of this report describes the development of  
a mathematical model for the life cycle cost analysis  
of electronics, electro-optical, optical, and opto-  
mechanical systems.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 691 13/2 5/3 9/2

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLSystems Approach to Life-Cycle Design of  
Pavements. Volume II. LIFE2 System  
Documentation.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JAN 79 458P Lindow, Edward S. ;  
REPT. NO. CERL-TR-M-253-VOL-2  
PROJ: 4A763734DT06  
TASK: 01

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, AD-A064  
698.DESCRIPTORS: \*Pavements, \*Life cycle costs,  
\*Systems approach, \*Computer programs, Maintenance  
management, Runways, Civil engineering, Flow  
charting, Construction, Army Corps of Engineers,  
Roads, Subroutines  
IDENTIFIERS: LIFE2 Automated System, WU001,  
AST08, PE63734A

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This report is the second of a three volume final report which documents an automated system, LIFE2, for analyzing pavement designs and maintenance and repair strategies based on life-cycle costs. LIFE2 models existing Corps of Engineers criteria for designing both rigid and flexible pavements for airfields, roads, and streets. The program also includes analytical procedures for evaluating earthwork, drainage, and frost protection requirements in addition to maintenance costs. The resulting combinations of design schemes and maintenance strategies are ranked by total cost over the design life of the pavement. Volume I is the LIFE2 User Manual, Volume II is the LIFE2 System Documentation, and Volume III is the LIFE2 Program Listing. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 667 9/5 14/1 14/4

NAVAL OCEAN SYSTEMS CENTER SAN DIEGO CA

Low Cost Components: Selection and  
Acquisition of Microelectronic Devices.

(U)

DESCRIPTIVE NOTE: Final rept. May 77-Sep 78.  
FEB 79 50P Townsenc, J. H. ;  
REPT. NO. NOSC/TD-223  
MONITOR: GIDEP E150-2362

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Microelectronics, \*Microcircuits,  
Cost effectiveness, Reliability (Electronics),  
Low costs, Naval procurement  
IDENTIFIERS: TELCAM-2 Project

(U)

(U)

Low Cost Components is an acquisition research project addressing microelectronic devices. The goal is to improve reliability and reduce costs associated with components, especially microcircuits. Microcircuits are high-lighted because they are subject to common problems with other component types plus the problems associated with a rapidly evolving technology. Guidance is provided for the selection and screening of microelectronic devices. The project implements findings and recommendations from the TELCAM II project, reported in Naval Electronics Laboratory Center (NELC) TR 1957. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 424 6/6

CORPS OF ENGINEERS WASHINGTON D C

Costs and Benefits of Aquatic Weed Control.

(U)

APR 79 51P Gangstad,E. O. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weed control, \*Cost analysis, Aquatic weeds, Aquatic plants, Benefits, Economic analysis, Chemicals, Control, Problem solving, Biology

(U)

In order to define the extent of the aquatic weed problem in terms of economic costs and benefits an attempt is made to develop order of magnitude estimates for specific damage caused by weeds in certain settings. These estimates would give a better perspective of the problem and provide guidance to which method of control to use. The Corps of Engineers Aquatic Plant Control Program, initiated in 1899, was the first effort to control weeds by the U.S. Government. Waterhyacinth, alligatorweed, Eurasian watermilfoil and hydrilla are the primary damaging aquatic weeds. Mechanically chemical and biological weed control methods are currently being used. Benefit-cost analysis is the term given to studies by planners to assist in finding the best course of action from an economic viewpoint. It differs from routine decision-making by making use of quantitative evaluation, in monetary terms, of the goods and services expected (benefits) and the goods and services expended (costs). The benefit-cost ratio is the proportion of benefit to cost. For example, a benefit to cost ratio of 1.5:1.0 means that benefits are expected to be 150% of the cost. A B/C ratio of 1.0:1.0 means that this project will produce a rate of return equal to the benefit-cost evaluations. The higher the ratio the more justified the project should be.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 277 21/5 20/4

AIRRESEARCH VFG CO OF ARIZONA PHOENIX

Alternate Subsonic Low-Cost Engine.

(U)

DESCRIPTIVE NOTE: Final technical rept. 1 Apr 76-31 Dec 77,

MAY 78 168P Saerst,C. F. ;Sandborn,J.

W. ;

REPT. NO. 76-212199(21)

CONTRACT: F33615-76-C-2063

PROJ: 3012

TASK: 08

MONITOR: AFAPL TR-78-31

UNCLASSIFIED REPORT

Availability: Document partially illegible.  
DESCRIPTORS: \*Turbojet engines, \*Afterburners, \*Supersonic characteristics, Augmentation, Low costs, Turbochargers, Production rate, Ramjet engines, Compressors, Air flow, Thrust augmentation, Static tests, Data acquisition, Test equipment

(U)

IDENTIFIERS: WUAFAPL3020837 PE62203F

(U)

This document presents the final report on the research and development of a turbojet derived from low-cost, high-production turbocharger components and an augmentor based on a low-cost, ramjet sudden-expansion burner. The engine, designated AIRResearch ETJ131 Model 1030, is an afterburning derivative of the AIRResearch ETJ131 engine. Changes to the basic ETJ131 included placing the combustor parallel to the engine center line, incorporating aerodynamic changes to accommodate the additional airflow required to achieve the thrust goal for the Model 1030, and adding an afterburner.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 218 8/9 18/3 8/7

ENGINEERING DECISION ANALYSIS CO INC IRVINE CA

Cost and Feasibility Evaluation for the  
Excavation of Large Hemispherical Cavities in  
Rainier Mesa.

(U)

DESCRIPTIVE NOTE: Topical rept. Jan-Oct 78.  
OCT 78 206P Kipp, Thomas R.; Kennedy,  
Robert P.;

REPT. NO. EDAC-177-041.1R  
CONTRACT: DNA001-78-C-0281  
PROJ: J45HAXS  
TASK: X311

MONITOR: DNA, SBIE 4723T, AD-E300 488

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Mining engineering, \*Excavation,  
\*Engineering geology, Nevada, Structural geology,  
Cavities, Hemispheres, Joints,  
Faults(Geology), Geologic formation, Cost  
estimates, Feasibility studies, Nuclear explosion  
testing, Underground explosions, Rock, Bolts  
IDENTIFIERS: Rainier Mesa, Nevada test site,  
PE62710H, WU01, WU02

(U)

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In order to provide necessary facilities for the  
fielding of experiments in support of the underground  
nuclear testing program, there has been an increase  
in interest concerning the construction of large  
underground caverns in Rainier Mesa. As a  
result, a cost and feasibility program was  
commissioned to evaluate hemispherical cavities  
between 24.4 and 91.4 m (80 and 300 ft) in diameter.  
The rock support designs for the cavities are based  
upon the use of internally installed rockbolts for  
the smaller cavities and tendons installed from  
annular galleries for the larger chamber. The  
evaluation program included research into past  
experience pertaining to the excavation and support  
of large underground caverns, assessment of the  
geological conditions which exist in Rainier  
Mesa, preliminary design of the cavities and their  
rock support system based upon the geological  
setting, development of mining plans for the  
excavation of the caverns, and estimation of the cost  
and manpower schedule to complete the construction of  
each size chamber based upon the preliminary design (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A067 194 5/9 17/2

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH NJ

Cost Effectiveness Program Plan for Joint  
Tactical Communications, Volume III, Life  
Cycle Costing, Appendix D, Military  
Personnel and Training Costs.

(U)

JAN 79 38P  
REPT. NO. ITT-ORT-032-798-V3-AP-D

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes Rept. no. ITT-ORT-  
032-75-V3-AP-D, AD-a022 062, Appendix D to AD-  
A055 147.

DESCRIPTORS: \*Military training, \*Tactical  
communications, \*Military personnel, \*Communication  
equipment, \*Life cycle costs, \*Joint military  
activities, Logistics support, Cost analysis,  
Tactical communications, Cost estimates,  
Tables(Data), Design to cost, Cost  
effectiveness, Retirement(Personnel), Learning  
curves, Standards, Economics  
IDENTIFIERS: Military retirement, TRI TAC  
Project

(U)

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The guidelines and methodology of Volume III  
outline the general problems of estimating total  
future acquisition and ownership costs of joint  
tactical communications. This appendix provides a  
methodology, appropriate cost tables, and a set of  
sample calculations that will enable the cost analyst  
to calculate the economic cost to DOD of selected  
types of military personnel. The appendix also  
provides information for those equations presented in  
Volume III that require annual or hourly military  
personnel and training costs. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A066 729 12/1 14/1

CORNELL UNIV ITHACA N Y SCHOOL OF OPERATIONS RESEARCH AND INDUSTRIAL ENGINEERING

The Value of the Non-Atomic Game Arising from a Rate-Setting Application and Related Problems.

(U)

DESCRIPTIVE NOTE: Technical rept..

APR 78 75P Raanan, Joseph ;

REPT. NO. TR-372

CONTRACT: N00014-75-C-0678, NSF-MPS75-02024

UNCLASSIFIED REPORT

DESCRIPTORS: \*Game theory, \*Cost analysis, Allocations, Utilization, Telephone systems, Lyapunov functions  
IDENTIFIERS: Nonatomic games

(U)

(U)

The work is motivated by the following problem: bulk-service telephone lines were installed at Cornell University, to be used for long-distance calls. The charges paid to the telephone company are mostly fixed monthly charges and are not usage-related. The problem is how to allocate these costs back to the users in a per call fashion, and how to do it in a way that is fair and efficient. The problem was solved by using the value of the associated non-atomic game. To be able to do this, the theory of non-atomic games had to be extended by weakening certain differentiability requirements. This is done here: in addition a number of results about full-range game are obtained. Next the problem of non-atomic linear production games is studied. A number of results about the cores of such games are obtained, extending and strengthening similar results about finite linear production games. In addition, some results about the value of such games are established, and relationships between the core and the value are derived for a special case.

(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A066 583 5/1 14/1 15/5

ARMY PROCUREMENT RESEARCH OFFICE FORT LEE VA

The Application of Quantity Discounts in Army Procurements.

(U)

DESCRIPTIVE NOTE: Final rept..

MAR 79 33P Zabel, Wayne V. ;Gajdalo.

Steven ;

REPT. NO. APRO-706-1/IRQ-254

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army procurement, Quantity, Acquisition, Costs, Reduction, Savings, Inventory  
IDENTIFIERS: Discounted costs, Quantity discount

(U)

(U)

The Department of Defense (DOD) has directed the use of basic Economic Order Quantity (EOQ) principles in the acquisition of secondary items. One assumption of the EOQ model is that there is no control over acquisition price; yet, it has been established that the unit price of an item is not always independent of the quantity procured. The approach taken in this study included a review of the Quantity Discount (QD) program as implemented by the Air Force, and the development of a total variable cost equation to evaluate offers in response to a QD solicitation. A QD program in the Army is expected to result in reductions in both acquisition cost and long run administrative workload. A proposed QD program has been developed and it is recommended that a test be conducted at one or more Materiel Readiness Commands to determine the degree of success a full QD program can be expected to accomplish.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A066 557 5/3 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Discounting Theory and its Application in the  
Public Sector.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
DEC 79 52P Bonna,Ralph Anthony ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Costs, \*Investments, Public  
administration, Federal budgets, Rates, United  
States government, Policies, Benefits, Time  
dependence, Inflation(Economics), Economic  
analysis, Theory, Theses

(U)

IDENTIFIERS: \*Discounting theory, Social discount  
rate

(U)

The purpose of this paper is to review the current policy established by the Office of Management and Budget (OMB) concerning the use of discounting in evaluating time-distributed costs and benefits of proposed public investments. Although a widely accepted concept in the private sector, the use of discounting in the public sector has been less clearly defined and a subject of considerable debate. The mechanics of discounting and the importance of the discount rate in investment decisions are discussed. A brief history of discounting in the public sector is presented including highlights of the Congressional Hearings in 1969 from which the current policy resulted. Several issues relating to the OMB policy such as the question of social versus economic goals, the effect of budget constraints, and the potential misapplication or misuse of the discounting methodology are addressed. Particular attention is given to the problem of inflation and its impact on the established rate.

(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A066 518 5/3 12/1

CARNEGIE-MELLON UNIV PITTSBURGH PA MANAGEMENT SCIENCES  
RESEARCH GROUPA Parametric Linear Complementarity Technique  
for the Computation of Equilibrium Prices in a  
Single Commodity Spatial Model.

(U)

DESCRIPTIVE NOTE: Management science research rept..

DEC 78 45P Pang,Jong-Shi ;Lee,Patrick  
S. C. ;

REPT. NO. MSRR-427

CONTRACT: N00014-75-C-0621

UNCLASSIFIED REPORT

DESCRIPTORS: \*Econometrics, \*Commodities, \*Price  
index, \*Linear programming, Algorithms,  
Equilibrium(General), Quadratic programming,  
Matrices(Mathematics), Networks, Computations

(U)

IDENTIFIERS: WUNR047048

(U)

This paper presents a parametric linear complementarity technique for the computation of equilibrium prices in a single commodity spatial model. We first reformulate the model as a linear complementarity problem and then apply the parametric principal pivoting algorithm for its solution. This reformulation leads to the study of an arc-and-weighted adjacency matrix associated with a simple digraph having weights on the nodes. Several basic properties of such a matrix are derived. Using these properties, we show how the parametric principal pivoting algorithm can be greatly simplified in this application. Finally, we report some computational experience. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A066 136 9/3 14/1

ANALYTIC SCIENCES CORP READING MASS

Avionics Standardization Potential  
Analysis.

(U)

DESCRIPTIVE NOTE: Final rept. 16 May 77-16 May 78.

NOV 78 89P Gates, Robert K. ; Shipp.

Robert F. ;

REPT. NO. TASC-TR-1059-3

CONTRACT: F33615-77-C-1167

P. 7J: 2003

TASK: 02

MONITOR: AFAL TR-78-168

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Avionics. \*Standardization. \*Cost  
analysis. Life cycle costs. Computer programs.  
Computer program documentation. Potential theory.  
Data reduction. Systems analysis

(U)

IDENTIFIERS: WUAFAL20030244, PE62204F

(U)

The objective of the Avionics Standardization Potential Analysis program is to develop a general methodology for evaluating the benefits accruing from the use of standard equipment across future USAF avionics systems. The methodology has been developed using navigation avionics, as being representative of avionics in general, in a study of standardization potential across navigation systems (SPANS). The methodology covers the process of establishing future avionics systems requirements through mission analysis, identification of available equipment for the design of mission-responsive avionics suites, evaluation of future quantitative demands for avionics equipment, synthesis of mission-capable avionics systems, collection of relevant cost and reliability data and evaluation of standardization options using a computer-based Standardization Evaluation Program (STEP).

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A055 864 14/1 9/2

ARMY AVIATION RESEARCH AND DEVELOPMENT COMMAND ST LOUIS  
MOSources and Nature of Cost Analysis Data  
Base Reference Manual.

(U)

DESCRIPTIVE NOTE: Interim rept..

FEB 79 153P Rogers, Thomas R. ;

REPT. NO. HSAAVRADCOM-TR-79-9

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A048 322.

DESCRIPTORS: \*Cost analysis. \*Data bases. \*Cost  
estimates. Data acquisition. Skills. Sources.  
Army planning. Standardization. Data storage  
systems. Military requirements

(U)

Citing specific examples, the report examines, evaluates, analyzes and portrays the sources and nature of the Cost Analysis data base emphasizing important interrelationships between process (gathering, normalization, evaluation), professional skill requirements, the planning of future report revisions, and the development of new data sources. For analysis, the main body of the report employs an expanded 13-step format. Entries on the format were obtained from personnel interviews. The report is organized to permit future changes and to facilitate cross-referencing. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A065 643 14/1 14/4

MARTIN MARIETTA AEROSPACE ORLANDO FLA

Reliability Trade-Offs for Unit Production Cost.

(U)

DESCRIPTIVE NOTE: Final technical rept. Jun 77-May 78.

JAN 79 72F Butler, Thomas W. ;

CONTRACT: F30602-77-C-0118

PROJ: 2338

TASK: 02

MONITOR: RADC IR-78-280

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost effectiveness. \*Trade off analyses. \*Reliability. Costs. Production. Models. \*Standardization. Vendors. Select. Spare parts. Control. Assembly

IDENTIFIERS: PE62702F, WURADC23380211

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Martin Marietta Corporation conducted a 12 month study program to develop models for the evaluation of trade-offs in the requirement to execute specific reliability program elements, the resultant achieved reliability and the impact upon unit production cost. The program elements considered include: Parts standardization, selection and control; vendor selection, qualification and surveillance; and screening and test programs at piece part and various assembly levels. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A065 570 14/1 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

The Production Function and Airframe Cost Estimation.

(U)

DESCRIPTIVE NOTE: Master's thesis.

DEC 78 72P Long, John A. ;

REPT. NO. AFIT/GOR/5N/78D-8

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Airframes. \*Cost models. Cost Estimates. Least squares method. Nonlinear systems. Data bases. Models. Theses

(U)

In recent years, men and governments have become keenly aware of the huge capital outlays necessary in the acquiring of new weapons systems. Increased burden on limited capital has required more complete and careful planning. This planning has led to the need for accurate and timely cost predictions of new systems. Historically, the variables affecting the future cost of aircraft airframes have been proven to be airframe weight and aircraft speed. These are often combined with learning hypothesis to form an airframe cost model. In this paper, the production function of microeconomics is combined with weight, speed, and learning to form a nonlinear cost estimation model. Nonlinear least squares regression analysis was used in evaluating this model. Although the results are inconclusive, based on the data used, weight and speed combined with learning still appear to be the best predictors of aircraft airframe cost. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A065 552 7/3

ARMY MATERIALS AND MECHANICS RESEARCH CENTER WATERTOWN  
MASS

Low-Cost Solvents for the Preparation of  
Polyphenylquinoxalines.

(U)

DESCRIPTIVE NOTE: Final rept..

JAN 79 12P Wentworth, Stanley E. ;

Larsen, Deborah J. ;

REPT. NO. ANMRC-TR-79-3

PROJ: 1L162105AH84

UNCLASSIFIED REPORT

DESCRIPTORS: \*Quinoxalines,  
\*Synthesis (Chemistry), Phenyl radicals,  
Solvents, Costs, Monomers, Polymers, Phenols,  
Thermal stability, Oxidation reduction reactions,  
Molecular weight

IDENTIFIERS: ASH84, PE62105A

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Recent studies have shown there to be great potential for reducing the cost of polyphenylquinoxalines by significantly lowering the cost of the requisite monomers. Such reductions have made previously insignificant solvent costs an important factor in the overall resin cost. Accordingly, a polyphenylquinoxaline was prepared in solvents where relatively expensive isomerically pure m-cresol was replaced with technical phenol or cresol. A series of comparisons was made between these polymers and a polyphenylquinoxaline prepared in the conventional solvent. It was conclusively shown that each of the polymers was of comparable quality in terms of thermal oxidative stability and molecular weight. Thus, less costly solvents can be used for the preparation of polyphenylquinoxalines, thereby further reducing the cost of these superior resins. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A065 546 5/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

Administration of Cost Accounting  
Standards.

(U)

DESCRIPTIVE NOTE: Final rept..

JAN 79 35P White, Richard P. ; Weinstein,

Robert M. ;

CONTRACT: MD4903-77-C-0370

UNCLASSIFIED REPORT

DESCRIPTORS: \*Standards, \*Costs, \*Accounting,  
Management, Department of Defense, Decision  
making, Government procurement

(U)

This report examines the process for administering CAS requirements within DoD and concludes that extensive revision of procedures is not necessary. The report states that many administrative contracting officers (ACOs) have difficulty executing the CAS requirements; that, as a group, ACOs are inadequately prepared to make the necessary decisions; that CAS administration is done more intensively when the ACO is located at the contractor's plant; and that prime contractors rarely administer the CAS provisions in their subcontracts. The report concludes that DoD could make more effective use of people and time by improving the capabilities of ACOs and recommends actions to give those administering CAS the knowledge and skills needed to make required decisions. It recommends creation of a single office in DoD to be responsible for all DoD CAS interpretations and guidance, recommends other specific tasks and procedures for that office and recommends elimination of CAS specialists at all organizational levels between ACO and the CAS office. It also recommends that DoD consider proposing changes to the CAS Board that would exempt negotiated defense contracts based on adequate price competition and that would restrict application of CAS to major contractors with on-site ACOs and subcontractors who also hold CAS-covered prime contracts. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A065 513 1/3 14/2 1/2

DOUGLAS AIRCRAFT CO LONG BEACH CALIF

Feasibility and Cost Effectiveness of  
Airborne Tire Pressure Indicating Systems.

(U)

DESCRIPTIVE NOTE: Final rept. Sep 7/-Sep 78.  
OCT 78 125P Shuter, R. L. ;  
CONTRACT: DOT-FA77WA-4070  
MONITOR: FAA/RD 78-134-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft tires. \*Pressure gages.  
\*Aviation safety. Warning systems. Airborne.  
Detection. Pressure transducer. Safety equipment.  
Measuring instruments. Display systems. Cost  
effectiveness. Feasibility studies

IDENTIFIERS: \*Airborne tire pressure indicating  
systems

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The cost-effectiveness and feasibility of airborne  
tire pressure indicating systems are evaluated for  
potential application to modern air carrier  
transports having 6, 10, and 18 wheels. Both wheel  
mounted pressure readout gauges and devices and  
cockpit tire pressure warning indicators are studied.  
Typical wheel mounted readout devices and eleven  
conceptual cockpit indicating systems are discussed.  
Information on accuracy, temperature compensation  
requirements, weight, installation cost, system cost,  
and system maintenance cost is provided. Each  
cockpit system is evaluated against important design  
criteria which require that cockpit systems cause no  
false warnings and that each system be capable of  
being tested periodically to determine its ability to  
detect a low pressure tire when it occurs. A study  
of tire failures is made for 1973-1976 identifying  
rate of tire failures and aircraft damage costs  
resulting from tire failures. The study presents  
data that shows that 65% of airframe damage cost is  
related to underinflation - induced or related tire  
failures which may be avoided by a properly designed  
tire pressure indicating system. Average airframe  
damage cost per departure for each study aircraft,  
based on actual airline data, is presented with  
comments on delay and cancellation costs.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD-A055 145 9/2 14/1

FEDERAL COBOL COMPILER TESTING SERVICE WASHINGTON D C

Handbook For Estimating Conversion Costs of  
Large Business Programs.

(U)

DESCRIPTIVE NOTE: Final rept..  
FEB 79 47P Oliver, Paul ;  
REPT. NO. FCCIS/TR-79/01

## UNCLASSIFIED REPORT

Available from National Technical Information  
Service, Springfield, VA, 22161. PC\$7.50.  
MF\$7.50.

DESCRIPTORS: \*Data storage systems. \*Cost estimates.  
Handbooks. Data management. Computer programs.  
High level languages. Conversion. Resources.  
Data processing

(U)

This handbook is intended to assist a manager in  
making estimates of conversion costs for large  
business/administrative data processing systems. It  
assumes that source programs are in a higher-level  
language (probably COBOL), but most of the  
procedures are applicable to any conversion. The  
'production' phase would be the one most affected by  
deviations from these assumptions. The user of the  
handbook will note that many cost components are not  
quantified. This was done in those cases where a  
generalized rule of thumb, out of context, is simply  
not available. Thus, the user will have to supply  
his own figures. In all cases, estimates given are  
not to be taken as universal truths. A user of this  
handbook should not feel constrained by these  
estimates if his knowledge of his specific situation  
suggests different estimates. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 996 5/9 1/2 14/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A Cost-Benefit Analysis of the Proposed Consolidation of All Navy and Marine A6-E Fleet Replacement Training Squadrons.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
DEC 78 147P Kelley, Kevin Philip ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Flight training, \*Naval training, \*Marine Corps training, \*Cost effectiveness, Naval air stations, Attack aircraft, Feasibility studies, Cost estimates, Resource management, Naval planning, Flight crews, Proficiency, Manpower utilization, Squadrons, Theses  
IDENTIFIERS: A-6 aircraft, A-6E aircraft

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This thesis contains a Cost-Benefit Analysis conducted to determine the advisability and the economic feasibility of consolidating all Navy and Marine Corps A-6E Fleet Replacement Training Squadrons. A detailed examination is made of the prevailing and projected conditions at each of the current training sites. The accumulated data analyzed regarding its effect on the training environment overall and the requirements for aircraft and personnel support under both present circumstances and the proposed conditions of consolidation. A range of feasible alternatives is then developed and cost estimates are presented for those possibilities. It is shown that consolidation is a realistic option, with certain logistical constraints, which will produce specific benefits in the quality of the resultant aircrews and possible fiscal savings to the Department of the Navy as well. The final recommendation involves adoption of the proposal according to the guidelines of one of two realistic alternatives developed by the research.  
(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 698 13/2 5/3 9/2

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Systems Approach to Life-Cycle Design of Pavements. Volume III. LIFE2 Program Listing.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JAN 79 453P Lindow, Edward S. ;  
REPT. NO. CERL-TR-M-253-VOL-3  
PROJ: 4-763734DT08  
TASK: 0

UNCLASSIFIED REPORT

Availability: Document partially illegible.  
SUPPLEMENTARY NOTE: See also Volume I. AD-A064 157.

DESCRIPTORS: \*Pavements, \*Life cycle costs, \*Computer programs, \*Systems approach, Civil engineering, Runways, Roads, Subroutines, Materials laboratories, Maintenance management, Statistical data, Construction materials, Road building equipment  
IDENTIFIERS: LIFE2 Automated system. PE63734A.  
AST08, WU001

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This report is the third volume of a three-volume report which documents an automated system (LIFE2) for analyzing pavement designs and maintenance and repair strategies based on life-cycle costs. LIFE2 models existing Corps of Engineers criteria for designing rigid and flexible pavements for airfields, roads, and streets. The program includes analytical procedures for evaluating earth work, drainage, and frost protection requirements in addition to maintenance costs. The resulting combinations of design schemes and maintenance strategies are ranked by total cost over the design life of the pavement. Volume I is the LIFE2 Users Manual, Volume II is the LIFE2 System Documentation, and Volume III is the LIFE2 Program Listing. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 693 21/5 11/6

GENERAL ELECTRIC CO CINCINNATI OHIO AIRCRAFT ENGINE GROUP

Ti/Al Design/Cost Trade-Off Analysis.

(U)

DESCRIPTIVE NOTE: Final rept. 12 Sep 77-12 Mar 78, OCT 78 125P Holowach, J.; Redden, T. K.

REPT. NO. R78AEG534  
CONTRACT: F33615-77-C-2066  
PROJ: 3066  
TASK: 12  
MONITOR: AFAPL TR-78-74

UNCLASSIFIED REPORT

DESCRIPTORS: \*Titanium alloys, \*Aluminum alloys, \*Turbojet engines, Superalloys, Nickel alloys, Costs, Weight reduction, Cost effectiveness, Trade off analyses, Engine components, Intermetallic compounds, Compressors, Axial flow compressors, Gas turbine blades, Ducts, Powder metallurgy  
IDENTIFIERS: Liners, Nonpyrophoric, PE52203F, WUAFAP130661248

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IAC ACCESSION NUMBER: NCIC-107174  
IAC DOCUMENT TYPE: NCIC -HARD COPY--

A new class of alloys based on intermetallic compounds in the titanium aluminum system has shown the potential for application in the temperature range of 1000-1700 F. This program was undertaken to investigate the type of application and payoff that would result. Two titanium aluminum alloys were looked at, the Ti3Al (alpha two) and TiAl (gamma). The use of Ti3Al was restricted to static components, whereas TiAl was limited to dynamic components. The dynamic application selected was a compressor and turbine blade. The static application was a mixing duct and exhaust duct liner. Cost of the selected titanium aluminides components was compared with the current cost of the nickel-base-superalloy components. The results show a cost increase for all the components. A detailed structural analysis of the four components shows the substitution would lead to longer life components.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 466 21/4

FEDERAL AVIATION ADMINISTRATION WASHINGTON D C OFFICE OF AVIATION POLICY

A Proposed Aviation Energy Conservation Program for the National Aviation System. Volume II. The Intermediate and Long Run, 1979-1990.

(U)

DESCRIPTIVE NOTE: Final rept. NOV 78 83P  
REPT. NO. FAA-AVP-78-12-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3. AD-A064 623.

DESCRIPTORS: \*Energy conservation, \*Aviation fuels, \*Cost analysis, Savings, Efficiency, Policies, Fuel consumption, Commercial aviation, Inventory control, Computer programs, Performance (Engineering)

(U)

IDENTIFIERS: \*Aviation Energy Conservation Program

(U)

This study presents an overview of potential options for improving aviation energy efficiency. Included in the proposed program are alternatives that could be pursued by the Federal Government as well as options that could be adopted by the various segments of the aviation industry. The report is in four volumes: 1 - The Short Run, 1977-1978; 2 - The Intermediate and Long Run, 1979-1990; 3 - The Proposed Aviation Energy Conservation Program; and Summary - Overview of preceding technical volumes. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 454 1/5 5/3 5/1

FEDERAL AVIATION ADMINISTRATION WASHINGTON D C OFFICE OF AVIATION POLICY

Financing the Airport and Airway System:  
Cost Allocation and Recovery.

(U)

DESCRIPTIVE NOTE: Final draft rept.,  
NOV 78 77P Rodgers, John M. ;  
REPT. NO. A-AVP-78-14

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Airports, \*Finance, \*Civil aviation,  
\*Taxes, Costs, Allocations, Utilization,  
Public administration, Recovery, Management  
planning and control  
IDENTIFIERS: LPN-FAA-AVP-210

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Development and maintenance of the Federal airport and airway system are authorized by the Airport and Airway Development Act of 1970 (as amended through 1976). Elements of existing legislation will expire in 1980. The purpose of this report is to analyze airport and airway system finance as a guide for developing post-1980 development and financial programs. Estimates are provided of 1978 and 1987 airport and airway system costs. System costs are allocated to users under two alternative procedures providing a range of cost responsibility. Aviation tax revenues are projected for 1978 and 1987 and are compared with allocated user costs. Several changes in aviation user taxes are evaluated as methods of aligning future airport and airway tax contributions with cost responsibility. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 442 5/1 12/1 5/3

DECISIONS AND DESIGNS INC MCLEAN VA

Applications of Decision Analysis to the U.  
S. Army Affordability Study.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
DEC 78 95P Suede, Dennis M. ;Donnell,  
Michael L. ;Feuerwerker, Phillip H. ;Ragland,  
Janice E. ;

REPT. NO. TR-78-10-7

CONTRACT: N0C014-78-C-01C0, ARPA Order-3469

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Advanced Decision  
Technology Program.DESCRIPTORS: \*Decision making, \*Cost analysis,  
\*Army planning, Resource management, Costs,  
Benefits, Allocations, Military requirements,  
Missions, Value, Ranking, Utilization  
IDENTIFIERS: Affordability, Decision analysis,  
Priorities, Utility analysis, Multiattribute  
utility analysis

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This report describes several applications of decision analysis to the Army's Affordability Study. These applications are focused on the allocation of resources to support the requirements, concepts, plans and programs of the Army. Decision analysis is a quantitative procedure for systematic evaluation of the alternative available to a decision maker. Decision-analytic techniques are used to structure a decision problem into clearly defined components, so that all options, outcomes, values, and probabilities are depicted. Decision analysis is first applied in cost-benefit analysis to rank the Army Program Development Increment Packages and Program Analysis Resource Review issues. The cost-benefit process involves quantifying the relative benefits and costs of each program. Since the purpose of prioritization is to determine the allocation of money to a discrete number of programs, the quantification of benefit is done according to an Army mission value system, not according to a monetary value system. Once the benefits have been quantified, the programs can be prioritized from the most cost-beneficial (benefit per dollar) to least.

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AD-A064 442



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 333 14/1 15/5 1/3

RAND CORP SANTA MONICA CALIF

An Appraisal of Models Used in Life Cycle  
Cost Estimation for USAF Aircraft  
Systems.

(U)

DESCRIPTIVE NOTE: Interim rept.,  
OCT 78 128P Marks, Kenneth E. ; Massey,  
H. Garrison ; Bradley, Brent D. ;  
REPT. NO. RAND/R-2287-AF  
CONTRACT: F49620-77-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Original contains color plates:

All DDC reproductions will be in black and white.  
DESCRIPTORS: \*Cost models, \*Life cycle costs,  
\*Military aircraft, Cost analysis, Cost estimates,  
Life expectancy, Allocations, Trade off analyses,  
Decision making, Acquisition, Maintainability,  
Reliability, Utilization

(U)

Although life cycle analysis is widely used as a management tool, considerable uncertainty still exists about its effectiveness with respect to economic tradeoffs, funding decisions, and resource allocations. This report evaluates some of the most widely used life cycle cost (LCC) models: AFR 173-10 models (BACE AND CACE); the Logistics Support Cost Model; the Logistics Composite model; the MOD-METRIC model; AFM 26-3 Manpower Standards; Air Force Logistics Command Depot Maintenance Cost Equations; the DAPCA model; and the PRICE model. The models are rated within a framework incorporating a set of life cycle cost elements and a set of cost driving factors. Color-coded illustrations summarize the results. The models are shown to have many shortcomings that limit their usefulness for life cycle analyses in which estimates of absolute, incremental cost are required. Specific areas are identified where driving factor/cost element combinations are not adequately addressed.  
(Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 223 5/3 15/5 9/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

An Approach to Software Life Cycle Cost  
Modeling.

(U)

DESCRIPTIVE NOTE: Master's theses.  
DEC 78 76P Walker, William H. . IV;  
REPT. NO. AFIT/GCS/EE/78-21

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, Air Force  
procurement, Computer applications, Computer  
programming, Algorithms, Mathematical models, Air  
Force planning, Theses

(U)

This report describes the development of a software life cycle costing model. The model reduces life cycle cost to a function of three parameters which are in turn functions of a number of factors that describe the software system. A step-by-step algorithm is presented for building the model from raw data. The model is exercised as an example with a small amount of data. Sensitivity analysis is used to help select the most salient factors. Brief descriptions of management applications and recommendations are presented. Appendices describe sample data and two computer programs used to develop the model. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 115 15/7 14/1

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND DOVER NJ  
SYSTEMS EVALUATION OFFICE

Preliminary Criteria for Optimizing the Cost  
Effectiveness of System Improvements to  
Enhance Survivability.

(U)

DESCRIPTIVE NOTE: Special publication,  
NOV 78 16P Moore, Richard L. ;  
REPT. NO. ARSED-SP-7600;  
MONITOR: GIDEP, SBIE E135-2528, AD-E400 202

UNCLASSIFIED REPORT

DESCRIPTORS: \*Lanchester equations. \*Tactical  
analyses. \*Cost effectiveness.  
Survival(General). Weapon system effectiveness.  
Figure of merit. Weapon system effectiveness. Kill  
probabilities. Economic analysis. Optimization.  
Life cycles

(U)

IDENTIFIERS: Lanchester square law

(U)

The Lanchester law of combat has been used used  
to develop a figure of merit for survivability. The  
economic principle of marginal utility has been  
applied to demonstrate a proposed method of  
evaluating the cost-effectiveness of various possible  
survivability enhancing improvements.  
(Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A063 928 9/1 17/4

NORTHROP CORP DES PLAINES IL DEFENSE SYSTEMS DIV

I/J Band Low-Cost Crossed-Field  
Amplifier.

(U)

DESCRIPTIVE NOTE: Interim technical rept. 28 Sep 77-8  
May 78.

DEC 78 29P Moats, Robert R. ;  
REPT. NO. 094-008686  
CONTRACT: DAAB07-77-C-2642  
MONITOR: DELET TR-77-2642-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Crossed field devices. \*Microwave  
amplifiers. \*Electron tubes. Low costs. Electronic  
warfare. E band. F band. J band. I band.  
Substrates. Gain. Injection  
IDENTIFIERS: Meander lines. Injected beam crossed  
field amplifiers. Laser cutting

(U)

(U)

This program is directed toward development of an  
I/J band, linear format, injected-beam crossed-  
field amplifier (IBCFA) for electronic warfare.  
The IBCFA should be capable of power output of  
1000 W peak, 200 W average, between 8.5 and 17  
GHz with 20 dB gain. A laser-cut shaped-  
substrate meander line is used. Performance in an  
E/F band IBCFA is evaluated, for which the  
objective performance in the 2-4 GHz band is 3.0  
kW peak power output, 1.0 kW average power  
output, also with 20 dB gain. In addition, a gun  
for I/J band is to be designed and evaluated.  
For E/F band, a cold-test model was built using  
the same technology as contemplated for operating  
tubes. Values of delay ratio, coupling impedance,  
and attenuation were substantially as expected. An  
E/F-band operating CFA using the shaped-  
substrate meander line, and other parts common with a  
standard E/F-band CFA design, was built and  
tested. Performance was comparable with a typical  
CFA of standard design, slightly lower in  
efficiency at mid band and approximately the same  
over the remaining part of the 2-4 GHz band. An  
I/J-band cold-test model was built, and  
measurements of delay ratio, coupling impedance, and  
attenuation were made.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMQ7

AD-A063 519 14/1 5/1

DECISIONS AND DESIGNS INC MCLEAN VA

Cost-Benefit Analysis Applied to the  
Program Objectives Memorandum (POM).

(U)

DESCRIPTIVE NOTE: Technical rept.,  
NOV 78 82P Buede, Dennis M. ; Ragland,  
Janice E. ;  
REPT. NO. TR-78-9-72  
CONTRACT: N00014-78-C-0100, ARPA Order-3052

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost effectiveness, \*Planning  
programming budgeting, Marine Corps planning, Army  
planning, Decision making, Methodology, Army  
budgets

(U)

IDENTIFIERS: Zero base budgeting

(U)

This report provides a complete discussion of a  
cost-benefit analysis for the preparation of the  
Program Objectives Memorandum (POM). This  
cost-benefit analysis incorporates elements from the  
fields of economics, organizational theory,  
psychology, and computer science. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMQ7

AD-A063 529 5/9

GENERAL RESEARCH CORP MCLEAN VA

Documentation of Analytical Services Provided  
in Support of Navy Enlisted Personnel  
Projections for POM-80.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Apr-30 Aug 78.  
OCT 78 46P Goudreau, Kenneth A. ;  
Schmitz, Edward J. ; McWhite, Peter B. ; Ross,  
Sue G. ; Sica, Geraldine ;  
REPT. NO. GP-228  
CONTRACT: NJC014-78-C-0435

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Manpower utilization, \*Naval budgets,  
\*Cost analysis, Models, Linear programming, Data  
bases, Tables (Data), Naval personnel, Enlisted  
personnel, Naval planning

(U)

This report documents the technical work General  
Research Corporation performed to assist CND  
OP-901M in preparing the FY 80 Navy  
Manpower Program Objectives Memorandum  
(POM-80). Recommendations to improve the  
accuracy of the Enlisted Projection Model used  
by OP-901M in the POM process are included.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A063 514 18/6 15/6

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND ABERDEEN  
PROVING GROUND MD BALLISTICS RESEARCH LABThe Nuclear Hardening of Army Tactical  
Systems: A Trade-Off Methodology.

(U)

DESCRIPTIVE NOTE: Final rept.,

NOV 78 25P Schwenk, R. Michael ; Klopovic,

J. Terrence ;

REPT. NO. ARBRL-MR-02875

PROJ: 1L162120AH25

MONITOR: SBIE AD-E430 149

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Radiation hardening, Army operations,  
Tactical weapons, Nuclear warfare, Trade off  
analyses, Cost effectiveness, Army equipment, Cost  
analysis, Life cycle costs, Tactical warfare,  
Survival(General)

(U)

IDENTIFIERS: COEA(Cost and Operational  
Effectiveness Analysis), ASH25, PE62120A

(U)

Presented is a trade-off methodology for  
quantitatively optimizing the nuclear hardening of  
Army tactical systems based on operational impact  
and life-cycle cost. Included is a proposed set of  
procedures and analyses which provide a systematic  
approach for ensuring nuclear hardening predicated  
upon mission-related survivability criteria and  
relative military worth. The methodology closely  
parallels current COEA designs and, as such, is  
applicable as a comprehensive, readily-adaptable,  
Army-wide program. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A063 382 5/1 17/2 14/1

DEFENSE COMMUNICATIONS ENGINEERING CENTER RESTON VA

An Overview of the Cost Benefit Analyses  
for the Automated Technical Control (ATEC).

(U)

DESCRIPTIVE NOTE: Technical note.

NOV 78 102P Stroud, Vincent D. ;

REPT. NO. DCEC-TN-7-78

MONITOR: SBIE AD-E100 151

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Control systems,  
\*Automation, Benefits, Commercial communications,  
Telephone systems, Logistics support, Maintenance,  
Monitoring, Manpower, Life cycle costs, Cost  
effectiveness

(U)

IDENTIFIERS: ATEC(Automated Technical  
Control), Cost benefit analysis

(U)

This report provides an overview of the ATEC  
cost/benefit analyses conducted by the government and  
industry and some of the automation work accomplished  
by commercial telephone companies. It consolidates  
the results of many of the plans and studies  
pertaining to the ATEC cost/benefit analyses and  
provides an insight into the scope and depth of what  
has been accomplished. As a basis for comparison,  
information on some of the automation work  
accomplished by GTE and the Bell System  
including the indications and evidence of the cost/  
benefits they experienced is provided in the report.  
Recommendations are made for the conduct of future  
cost/benefit analyses for the ATEC program.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 947 9/2 1/3

KEARNEY (A T) INC CHICAGO IL CAYWOOD-SCHILLER DIV

The Mission Trade-Off Methodology (MTOM)  
Model: User's Manual.

(U)

DESCRIPTIVE NOTE: Final rept. Mar 74-Feb 75.  
OCT 78 150P Strauss, W. J.; Bailey, N.  
D.; Kasper, M. W.;  
CONTRACT: F33615-74-C-5141  
MONITOR: JTCG/AS 76-S-002

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Rept. no. JTCG/AS-76-S-001, AD-A049 318.

DESCRIPTORS: \*Trade off analyses. \*Cost effectiveness. \*Aircraft. \*Computer programs. Survival (General). Modification. Weapon system effectiveness. Probability. Missions. Input output processing. Instruction manuals. User needs. FORTRAN. Flow charting  
IDENTIFIERS: MTOM computer programs. User manuals. FORTRAN 4 programming language. CDC 6600 computers. LPN-JTCG/AS-SA-6-02

(U)

(U)

The MTOM programs provide a means for evaluating the relative cost-effectiveness of proposed aircraft modifications for the purpose of enhancing survivability. There are two programs: MT0/E (mission trade-off/effectiveness) model and MT0/C (mission trade-off/cost) model. This report is designed to enable the user to prepare the inputs for the MTOM programs. The report explicitly explains formats, outputs, the relationships of inputs to outputs, and the limitations and restrictions on the inputs. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 864 21/5

WILLIAMS RESEARCH CORP WALLED LAKE MICH

Low Cost Expendable Engine.

(U)

DESCRIPTIVE NOTE: Final technical rept. Apr 76-Mar 78.

MAR 78 120P Huben, C. A.; Metsker, J.  
L.;  
CONTRACT: F33615-76-C-2123  
PROJ: 3066  
TASK: 15  
MONITOR: AFAPL TR-78-33

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Turbojet engines. \*Expendable. \*Gas turbines. Low costs. Axial flow compressors. Flight simulation. Manufacturing. Sheets. Engine components. Test facilities. Test methods  
IDENTIFIERS: PE62203F. \*UAFAPL30661522

(U)

(U)

A low cost expendable turbojet engine in the 200 pound thrust class was fabricated and tested. The design, manufacturing, and inspection concepts of the program resulted in the achievement of a projected engine cost of \$2883 each in lots of 1000 engines in terms of 1975 economics. Problems solved during the compressor rig testing and engine tune-up testing are discussed. The results of the engine demonstration testing both at sea level static conditions and under a simulated M<sub>0</sub> 0.7 condition are presented. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 719 13/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILL

Design of Solar Heating and Cooling  
Systems.

(U)

DESCRIPTIVE NOTE: Final rept.,  
OCT 78 57P Jondich, David M.; Leverenz,  
Donald James; Hittle, Douglas C.; Walton,  
George N.;  
REPT. NO. CERL-TR-E-139  
PROJ: 4A762731AT41  
TASK: T6

UNCLASSIFIED REPORT

Availability: Document partially illegible.  
DESCRIPTORS: \*Solar heating, \*Cooling, \*Solar  
energy, \*Cost analysis, \*Computerized simulation,  
Computer aided design, Solar collectors,  
Buildings (U)  
IDENTIFIERS: BLAST (Building Loads Analysis and  
Systems Thermodynamics) Program, WU021,  
AST41, PE62731A (U)

This report presents a method for making an energy  
and an economic cost/benefit analysis of solar energy  
systems. A graphical method is presented for  
evaluating the performance of solar domestic hot  
water systems, solar heating systems, and solar  
heating and cooling systems. Methods for selecting  
the optimum collector area based on benefit-to-cost  
ratio and for systematically making detailed design  
calculations using the Building Loads Analysis  
and System Thermodynamics (BLAST) computer  
simulation program are also presented. Practical  
considerations for solar system designs are  
discussed. The methods presented provide the  
required accuracy for both initial evaluations and  
final design calculations. Examples are provided  
throughout the text to aid in using the methods  
described. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 706 9/5 20/12

RCA SOLID STATE DIV SOMERVILLE NJ

Development Report for High-Reliability,  
Low-Cost Integrated Circuits.

(U)

DESCRIPTIVE NOTE: Rept. for 3 Nov 77-3 Sep 78.  
SEP 78 39P  
CONTRACT: N00039-76-C-0240  
PROJ: F54586  
TASK: XF54586002

UNCLASSIFIED REPORT

DESCRIPTORS: \*Integrated circuits,  
Chips (Electronics), Wafers, Silicon nitrides,  
Titanium, Platinum, Gold, Low costs, High  
reliability, Hermetic seals, Aluminum,  
Photomasking (U)  
IDENTIFIERS: Plastic packaging, Metallization,  
Automated assembly, PE62762H (U)

Wafer fabrication has been completed. The control  
units (aluminum metallized DIC and DIP devices  
and trimetal devices in open DIC packages) are  
90-percent complete. Thermal-shock testing of  
HRLC (high-reliability, low-cost) product has  
defined a beam-tape design problem which has  
necessitated the redesign of the beam tapes on all  
types. Life-test matrices have been run on CD4012  
and CA741 to gain a preliminary insight into the  
failure modes to be expected in Phase III.  
(Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 471 9/2 12/1

CALIFORNIA UNIV BERKELLY OPERATIONS RESEARCH CENTER

Scheduling Tasks with Exponential Service  
Times on Nonidentical Processors to Minimize  
Various Cost Functions.

(U)

DESCRIPTIVE NOTE: Research rept.,  
AUG 78 34P Weiss, Gideon; Pinedo, Michael

REPT. NO. ORC-78-16  
CONTRACT: N00014-77-C-0299, AFOSR-77-3213

UNCLASSIFIED REPORT

DESCRIPTORS: \*Multiprocessors. \*Dynamic programming.  
Scheduling. Exponential functions. Time intervals.  
Stochastic processes. Distribution functions. Cost  
effectiveness. Flow charting. Life Cycles  
IDENTIFIERS: MUNR042379

(U)

(U)

We consider preemptive scheduling of N tasks on m  
processors; processors have different speeds. tasks  
require amounts of work which are exponentially  
distributed, with different parameters. The  
policies of assigning at every moment the task ith  
shortest (longest) expected processing time among  
those not yet completed to the fastest processor  
available, 2nd shortest (longest) to the 2nd  
fastest etc., are examined, and shown to minimize  
expected values of various cost functions. As  
special cases we obtain policies which minimize  
expected flowtime, expected makespan and expected  
lifetime of a series system with m component  
locations and N spares. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 407 9/3 5/2

ROCKWELL INTERNATIONAL ANAHEIM CA ELECTRONIC DEVICES  
DIV

Hybrid Technology Cost Reduction  
Improvement Study Program. Volume II.  
Abstracts of Articles on Hybrid  
Microcircuits.

(U)

DESCRIPTIVE NOTE: Final rept.  
APR 78 109P

REPT. NO. C78-299/501-VOL-2  
CONTRACT: A09163-77-C-0299

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A062  
406.

DESCRIPTORS: \*Microcircuits. \*Hybrid circuits.  
\*Literature surveys. \*Abstracts. Bibliographies.  
Reliability (Electronics). Cost analysis.  
Savings

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 406 9/3 9/5

ROCKWELL INTERNATIONAL ANAHEIM CA ELECTRONIC DEVICES DIV

Hybrid Technology Cost Reduction Improvement Study Program. Volume I. Results of Literature Search and Questionnaire Survey.

(U)

DESCRIPTIVE NOTE: Final rept. 2 Sep 77-2 Mar 78.  
APR 78 108P Licari, J. J.; Perkins, K.

L. 1  
REPT. NO. C78-299/501-VOL-1  
CONTRACT: N00163-77-C-0299

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2 AD-A062 407.

DESCRIPTORS: \*Microcircuits. \*Hybrid circuits. \*Avionics. Literature surveys. Reliability(Electronics). Cost analysis. Savings. Adaptation. Questionnaires. Surveys. Bibliographies

(U)

Hybrid microelectronic circuits continue to fulfill a growing need in military avionics systems where physical size (volume and weight) and performance requirements cannot be met by the more conventional packaging techniques such as discrete components on printed wiring boards, and where cost and schedules preclude the use of more advanced methods. The military market is generally characterized as fast turnaround, high reliability, and low to medium volume for any one circuit type. A system is usually composed of a large number of diverse circuit types with usage of only 100 to 2000 circuits per year. These moderate quantities, coupled with lower nonrecurring design cost and shorter development times, often make hybrids an economic choice over custom LSI/VLSI. The hybrid market is dynamic and growing making it difficult to arrive at an annual sales figure; further most major aerospace companies have captive hybrid microcircuit facilities serving their system needs. However, estimates of the total military hybrid market for FY 1978, based on data received from the questionnaire, is \$250 to \$300 million, assuming an average price range of \$250 to \$300 per circuit.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 298 13/1 19/1 14/1

ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT COMMAND FORT BELVOIR VA PETROLEUM AND ENVIRONMENTAL TECH DIV

Economic Analysis of the Rotary Kiln and Fluidized Bed P and E Incinerators.

(U)

DESCRIPTIVE NOTE: Final rept..  
SEP 78 106P Ciccone, Vincent J.; Graves, Alan P.; Santos, Joseph S.; Scola, Robert;  
MONITOR: ARLCD.SBIE TR-78033, AD-E400 220

UNCLASSIFIED REPORT

DESCRIPTORS: \*Incinerators. \*Cost analysis. \*Fluidized bed processors. \*Life cycle costs. Rotation. Operation. Capacity(Quantity). Mathematical models. Sensitivity. Discrimination. Decision making. Computer applications. Industrial plants. Waste disposal. Solid propellants. Explosives

(U)

IDENTIFIERS: Rotary kilns. Present value unit cost. Capital. Interest

(U)

In the evaluation of alternate systems, it is necessary to consider the economic factors associated with each system. The economic analysis of the rotary kiln versus the fluidized bed incinerator was performed using the present value unit cost method. The method considers capital costs, operating costs, time horizons, depreciation, interest and other related factors. In all cases considered, the fluidized bed incinerator was the preferred alternative. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A062 247 14/1 9/5

BOEING AEROSPACE CO SEATTLE WA ENGINEERING TECHNOLOGY  
DIV

Hybrid Technology Cost Reduction and  
Reliability Improvement Study.

(U)

DESCRIPTIVE NOTE: Final rept.,

MAR 78 155P Weldon, H. M. . III;

Buldhaupt, L. F. ;

REPT. NO. D180-24054-1

CONTRACT: N00163-77-C-0293

UNCLASSIFIED REPORT

DESCRIPTORS: \*Hybrid circuits. \*Costs.  
\*Microcircuits, Assembly. Industrial production.  
Microelectronics, Avionics, Hybrid systems, Thin  
films, Thick films, Specifications.  
Reliability(Electronics), Cost analysis, Data  
bases

IDENTIFIERS: Electronics industry

(U)  
(U)

The objective of this multi-phase program is to  
develop the materials, processes, and controls to  
improve reliability and reduce cost of hybrid  
microelectronics for application in military avionic  
systems. The objective of the first phase, the  
study effort covered by this report, is to develop a  
data base for the subsequent phases. The first  
phase, performed over a 6-month period, consisted of  
two tasks: (1) collection of data and  
information and (2) data assessment and  
analysis.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A062 195 5/9

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Cost-Benefit Analysis of Training a Naval  
Reserve Seabee.

(U)

DESCRIPTIVE NOTE: Master's thesis.

DEC 78 57P Fisher, Rodney Lee ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval training. \*Military reserves.  
Naval personnel. Cost analysis. Active duty.  
Cost effectiveness. National Guard. Combat  
readiness. Theses

(U)

The defense of the United States today is based  
on the Total Force concept--including a  
combination of active duty and reserve forces in  
being which provide for the security structure  
essential during national crisis. However, the  
Naval Reserve forces have been continually  
attacked and reduced in size over the past ten years.  
Is this continual reduction totally justified. An  
analysis of the costs to maintain a Reserve  
Seabee relative to an active duty counterpart  
suggest that it costs seven times more to pay, train  
and support the latter. While trained to meet  
specialization and conditional requirements, the  
Reserve Seabee benefits both civic and other  
military organizations with contributed labor,  
completing many construction projects during the  
year. The positive benefits at lower cost make the  
Reserve Seabee an asset to our country's Total  
Force. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 169 13/10 14/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The FFG-7 Frigate an Application of the  
Design-to-Cost Concept.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 78 118P Cervaens Rodrigues, Jose  
Antonio Teixeira :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Frigates. \*Guided missile ships.  
\*Design to cost. Naval architecture. Shipbuilding.  
Escort ships. Cost estimates. Fleets(Ships).  
Military force levels. Regression analysis.  
Mathematical models. Operational effectiveness.  
Naval operations. Theses  
IDENTIFIERS: FFG 7 vessel

(U)

(U)

This thesis is the application of the concept of  
design-to-cost to the project of the FFG frigates.  
Using the available data relative to the major  
escort programs since 1950, a curve of force  
effectiveness vs. number of ships, similar to that  
presented by Vice Admiral Price in his  
congressional testimony on design of the patrol-  
frigate or FFG-7, was constructed and the results  
discussed. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 003 15/3 9/2

DEPARTMENT OF DEFENSE WASHINGTON D C

Optimization of a Computer Security Index  
Versus Cost.

(U)

JUN 76 67P missing. Richard P. :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Data processing security.  
\*Optimization. Computers. Cost effectiveness.  
Computer programs. Computer printouts. FORTRAN.  
Input output processing

(U)

In this paper, we propose a computer security index  
for measuring the security of computer systems and a  
strategy for purchasing computer security  
countermeasures in a cost effective manner.  
Required inputs for the model include definition of  
threats and countermeasures, relative importance of  
threats, costs of countermeasures, and the  
effectiveness of each countermeasure against each of  
the threats listed. If a standardized list of  
threats and countermeasures can be developed, the  
computer security index could also be used to compare  
the security of different computer systems.  
(Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD-A061 817 5/1 5/3

DATA RESOURCES INC WASHINGTON DC COST FORECASTING SERVICE

Development of Cost Escalation Indexes for Operation and Maintenance Budget Categories.

(U)

DESCRIPTIVE NOTE: Final rept..

JUN 78 124P Earl, Paul : Elwell, Craig :  
CONTRACT: WDA903-77-D-0080

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army budgets.  
\*Inflation(Economics). \*Planning programming budgeting. \*Cost estimates. \*Economic models. Indexes(Ratios). Army operations. Maintenance management. Resource management. Rates. Price index. Econometrics. Weighting functions. Data bases. Computer programs

(U)

High inflation rates are forcing the Services to take a more full and accurate account of probable escalation in the planning, programming and execution of their operating budgets. This report addresses the development of a comprehensive, disaggregated procedure for forecasting escalation in the Operations and Maintenance portion of the Army Budget. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD-A061 636 9/3 5/3

SYRACUSE UNIV N Y

Multilevel Modularization of Systems to Minimize Life Cycle Cost.

(U)

DESCRIPTIVE NOTE: Final technical rept..

SEP 78 55P Biedel, John E. : Bulcha.

Signat :

CONTRACT: F30602-75-C-0121

PROJ: 9567

TASK: 00

MONITOR: RADG TR-78-207

UNCLASSIFIED REPORT

Availability: Document partially illegible.  
DESCRIPTORS: \*Electronic equipment. \*Modular construction. \*Life cycle costs. Reliability. Mathematical models  
IDENTIFIERS: NRRADC95670016. PE62702F

(U)

(U)

Every electronic equipment modularization (partitioning of an electronic equipment into different numbers of line replaceable units) scheme incurs a different life cycle cost. Methodology which allows an equipment to be modularized or partitioned in a fashion such that life cycle cost is minimized must be developed. This report documents a new procedure which can be used to this end. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 421 14/1 5/1 5/11

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Cost/Benefit Analysis of the Department of  
Defense Family Housing Program.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 78 110P Klein, Terry Owens :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost effectiveness.  
\*Housing(Dwellings), Department of Defense,  
Naval shore facilities, Morale, Management.  
Theses

(U)

This thesis examines the costs and the benefits of alternative approaches to managing DOD family housing assets. The two approaches examined are Variable Housing Allowance and Fair Market Rental. These two alternatives seek to alleviate the inequities of the present housing system in dramatically different ways. While a Variable Housing Allowance would be more advantageous to the service member, a Fair Market Rental system is being promoted within Congress and the Executive Branch. An approach which combines elements of both the Variable Housing Allowance and Fair Market Rental is recommended as the most viable and equitable alternative to the present family housing system. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 403 13/2 5/3 5/4

COAST GUARD WASHINGTON D C MARINE ENVIRONMENTAL PROTECTION  
DIV

A Fee Collection Mechanism for the Oil  
Pollution Liability and Compensation  
Legislation.

(U)

DESCRIPTIVE NOTE: Final rept..  
AUG 78 66P Christensen, Michael W. :  
Froenlich, Maryann B. :  
REPT. NO. USCG-WEP-78-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Oil pollution. \*Oil spills. \*Costs.  
\*Legislation. Collecting methods. Crude oil.  
Environmental protection. Water pollution. Impos  
IDENTIFIERS: \*Oil pollution liability

(U)

(U)

The Presidential Initiatives for the reduction of oil pollution of our nation's waters (17 March 1977) mandated 'a study of the fee collection mechanism for the comprehensive oil pollution fund'. The proposed legislation creates a \$200 M fund called 'Superfund' to cover clean up costs and to compensate victims for damages from oil pollution. The fund will be sustained by a fee not to exceed \$.03 per barrel on all oil domestically produced and imported. Separate collection schemes are required for domestic crude oil, imported crude oil and products, and exported crude oil. Existing reporting and collection mechanisms would be modified to accommodate this fee collection mechanism. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 389 5/9 5/1

DYNAMICS RESEARCH CORP WILMINGTON MASS

Digital Avionics Information System (DAIS).  
Volume II. Training Requirements Analysis  
Model Users Guide.

(U)

DESCRIPTIVE NOTE: Final rept. May 75-Jan 78,  
SEP 78 79P Czuchry, Andrew J. ; Doyle,  
Kristy M. ; Frueh, Jonathan T. ; Baran, H.  
Anthony ; Dieterly, Duncan L. ;  
CONTRACT: F33615-75-C-5218  
PROJ: 2051  
TASK: '00  
MONITOR: AFHRL TR-78-58(11)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A056  
530.

DESCRIPTORS: \*Avionics, \*Digital systems,  
\*Information systems, \*Air force training, \*Life  
cycle costs, Manuals, Military requirements,  
Models, Operation, Interactions, Identification,  
Problem solving, Computer aided design, Cost  
models, Selection

(U)

IDENTIFIERS: DAIS (Digital Avionics Information  
System), WUAFHRL20510001, PE63243F

(U)

The training requirements analysis model (TRAMOD)  
described in this user's guide represents an  
important portion of the larger effort called the  
Digital Avionics Information System (DAIS)  
Life Cycle Cost (LCC) Study. TRAMOD is the  
second of three models that comprise a LCC modeling  
system for use in the early stages of system  
development. As part of the overall modeling  
system, the training model is an efficient tool for  
developing training programs on the basis of task,  
time, and resource criteria. A database containing  
information associated with these criteria is also  
included. The interactive nature of TRAMOD  
affords the user great flexibility in structuring its  
operation while retaining the capability of  
addressing specific training problems in depth.  
This guide explains the available options and  
illustrates the manner in which user/model  
interaction is accomplished. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 357 5/1 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

Air Force Acquisition Log-istics Division.  
its Creation and Role.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 78 150P Powers, Clarke W. ;  
Recktenwalt, Thomas J. ;  
REPT. NO. AFIT-LSSR-32-78B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force procurement, \*Life cycle  
costs, \*Logistics support, Weapon systems,  
Acquisition, Logistics management, Integrated  
systems, Missions, History, Theses

(U)

IDENTIFIERS: Air Force Acquisition Logistics  
Division

(U)

This thesis is a study of the Air Force  
Acquisition Logistics Division (AFALD) and  
how it fits into the acquisition community. The  
accomplishments of AFALD are examined against its  
objectives of influencing logistics supportability  
early in the acquisition process and providing a  
smooth transition of management responsibility from  
AFSC to AFALC at PMPT. To accomplish this, the  
thesis begins with a discussion of the acquisition  
process and a chronological development of the  
acquisition philosophy and structure from the Army  
Signal Corps in 1917 to the creation of AFALD.  
Then AFALD, along with its deputes, are  
examined as to mission and structure for interface  
into the acquisition community. Accomplishments of  
AFALD are then compared to AFALD's stated mission  
and objectives. Finally, several questions  
concerning lines of authority and responsibility are  
raised about the various organizations involved in  
the acquisition process. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 304 5/1 14/1 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSA Summary and Analysis of the Initial  
Application of Life Cycle Costing  
Techniques to a Major Weapon System  
Acquisition.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 78 110P Bell, Archie C. ;Turney,  
Daniel P. ;  
REPT. NO. AFIT-LSSR-35-788

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air force procurement, \*Life cycle  
costs, \*Attack aircraft, Cost models, Logistics  
support, Air Force budgets, Cost effectiveness,  
Systems analysis, Aircraft maintenance,  
Approximation(Mathematics), Theses  
IDENTIFIERS: A-10 aircraft(U)  
(U)

The first USAF major system acquisition program in which there was explicit consideration given to LCC was the A-X/A-10 Close Air Support Aircraft competition. LCC considerations were quantified using an operating and support (O and S) cost model developed under Project ABLE (Acquisition Based upon consideration of Logistics Effects). Air Force objectives in applying the O and S cost model were: (1) to encourage contractor consideration of operating and support costs in system design, (2) to aid in source selection, (3) to aid in evaluation of engineering change proposals, and (4) to aid in determining the magnitude of award fee (if any) to be granted the contractor. This research has focused on the degree to which these objectives were actually met, problems encountered in meeting them, and suggestions for improving future applications of O and S cost models in LCC programs. Several major deficiencies were discovered in data use and model application that cast serious doubt on the efficacy of this first O and S cost model application and require amelioration to avoid repetition of problems in future acquisition programs. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 300 15/5 5/1 5/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSIdentification and Definition of the Management  
Cost Elements for Contractor Furnished  
Equipment and Government Furnished  
Equipment.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 78 135P Dillard, Billy D. ;Inscoc,  
Philip D. ;  
REPT. NO. AFIT-LSSR-22-788

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air force equipment, \*Management  
planning and control, \*Cost analysis, Contract  
administration, Value engineering, Methodology,  
Cost effectiveness, Air Force procurement,  
Economics, Theses

(U)

ASPR requires that the program manager perform a cost analysis to determine which components should be procured as GFE instead of being purchased from the prime contractor as CFE. Many cost factors contribute to the decision to provide an item as CFE or GFE. One cost that must be considered is the cost of managing the item, which includes, for example, personnel costs and government and contractor overhead costs. The authors have identified, defined, and assessed the use of relevant and practical elements of contractor and government management cost that should be considered in the CFE/GFE selection process. The study shows that the cost elements are considered important, but not frequently considered, and generally management cost analysis is inadequate. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A061 227 1/3 14/1 9/2

WESTINGHOUSE DEFENSE AND ELECTRONIC SYSTEMS CENTER  
BALTIMORE MD SYSTEMS DEVELOPMENT DIVIntegrated Thermal Avionics Design  
(ITAD).

(U)

DESCRIPTIVE NOTE: Final rept..

JUN 78 156P Porter, R. F.; Levitt, E.  
R.; Lord, Y.; Dolbeare, R. T.; Worsnam, R.  
H. J.

REPT. NO. 78-0610

CONTRACT: F33615-77-C-2074

PROJ: 2402

TASK: '04

MONITOR: AFFDL

TR-78-76

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Avionics, \*Life cycle costs,  
\*Computer aided design, Computer programs, Trade  
off analyses, Systems engineering, Environmental  
management, Aircraft equipment, Computer  
architecture, Algorithms

(U)

IDENTIFIERS: PE62201F, WUAFFDL24020407

(U)

This volume contains a description of the ITAD  
study program results. It includes definition of  
the computer facility requirements and software and  
shows by example the improvement to be made in Life  
Cycle cost when ITAD is applied to the design of  
electronic equipment. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A061 157 13/2 5/1 5/2

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLSystems Approach to Life-Cycle Design of  
Pavements. Volume 1. LIFE2 User's  
Manual.

(U)

DESCRIPTIVE NOTE: Final rept..

SEP 78 93P Lindow, E. S. ;  
REPT. NO. CERL-TR-M-253-VOL-1  
PROJ: 4A763734DT08  
TASK: 01

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Pavements, \*Life cycle costs,  
\*Manuals, User needs, Experimental design,  
Runways, Roads, Computer programs, Maintenance,  
Pavement bases, Construction, Civil engineering,  
Concrete

(U)

IDENTIFIERS: PE63734A, AST08, WU001

(U)

This report is the first of a three-volume report  
which documents an automated system (LIFE2), for  
analyzing pavement designs and maintenance and repair  
strategies based on life-cycle costs. LIFE2 models  
existing Corps of Engineers criteria for  
designing both rigid and flexible pavements for  
airfields, roads, and streets. The program also  
includes analytical procedures for evaluating  
earthwork, drainage, and frost protection  
requirements, as well as maintenance costs. The  
resulting combinations of design schemes and  
maintenance strategies are ranked by total cost over  
the design life of the pavement.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 148 19/5 9/2 19/6

ARINC RESEARCH CORP ANNAPOLIS MD

Reliability, Maintainability, Strategic  
Reliability, and Life Cycle Cost Comparison  
Analysis of Three Alternative Mk 71 Mod 0  
Gun Mount Control System Designs.

(U)

DESCRIPTIVE NOTE: Final rept..

JUL 78 79P Klimowitch, P. ;

REPT. NO. 1644-03-3-1805

CONTRACT: N00197-76-C-0141

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Fire control systems. \*Naval guns.  
\*Microprocessors. Reliability. Maintainability.  
Life cycle costs. Specifications. Logistics  
management. Gun mounts. Comparison. Systems  
analysis

(U)

IDENTIFIERS: Mark-71 Mod-0 guns(8-in./6.5  
cal)

(U)

This report summarizes the work conducted by  
ARINC Research Corporation under Contract  
N00197-76-C-0141, Tasks 3 and 4, for the Gun  
System Engineering Center/Naval Ordnance  
Station, Louisville, Kentucky. These contract  
tasks required comparisons of reliability,  
maintainability, strategic reliability, and life  
cycle costs of three alternate control systems for  
the 8in./55 Caliber Mk 71 Mod 0 Major  
Caliber Light Weight Gun (MCLWG) and a  
review of a preliminary development specification for  
a microprocessor-based control system for this gun.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 147 9/1 9/5 13/8

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND FORT  
MONMOUTH NJ ELECTRONICS TECHNOLOGY/DEVICES LAB

Low-Cost, Crossed-Field Amplifier  
Meanderline Circuit Concepts.

(U)

DESCRIPTIVE NOTE: Research and development technical  
rept..

AUG 78 59P Bates, Calvin D. ; Hartley,

Joseph H. ;

REPT. NO. DELET-TR-78-18

PROJ: 1L162705AH94

TASK: B1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Crossed field devices. \*Microwave  
amplifiers. \*Power amplifiers. \*Delay lines.  
Plasma spraying. Dielectrics. Low costs.

Aluminum oxides. Beryllium oxides. S band. L

(U)

band. Substrates. Spinel

IDENTIFIERS: Meanderlines. Shielded meanderlines.  
PE62705A. ASH94

(U)

Experimental results of new, potentially low-cost,  
crossed-field amplifier (CFA) anode circuits are  
presented and compared with state-of-the-art  
structures. The shaped-substrate meanderline  
(SSML) has emerged as the optimum choice for  
achieving the desired low-cost objectives without  
compromising the excellent electrical characteristics  
of available injected beam CFA's (IBCFA). L-  
Band and S-Band meanderline circuits were  
designed and constructed on primarily low-dielectric  
constant substrates. Design aspects were  
investigated to optimize bandwidth and interaction  
impedance while maintaining simplified, low-cost  
structures. Circuit fabrication techniques using  
arc-plasma-sprayed (APS) spinel were evaluated and  
found deficient in the areas of low circuit  
attenuation and surface regularity. Laser machining  
techniques, which will be covered in another report,  
have recently emerged as the most promising approach  
for resolving SSML fabrication problems, and  
achieving low-cost circuit structures. A simulated,  
SSML, S-Band, anode design on beryllia  
dielectric was formulated and subsequently utilized  
by Northrop Corporation

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 146 6/5 5/1

ACADEMY OF HEALTH SCIENCES (ARMY) FORT SAM HOUSTON TEX  
HEALTH CARE STUDIES DIV

AMOSIST Program Field Evaluation Physician  
Savings and Cost Effectiveness. (U)

DESCRIPTIVE NOTE: Final rept.,  
AUG 78 163P Schopper, Aaron W. ;  
REPT. NO. HCSD-78-002-B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Medical personnel, \*Physicians,  
\*Cost effectiveness, \*Manpower utilization, Army  
personnel, Medical services (U)  
IDENTIFIERS: AMOSIST Program (U)

In response to the continuing shortage of physicians in the military, the US Army has recently developed a health care delivery system (the AMOSIST Program) which employs physician supervised enlisted corpsmen (AMOSISTS) in Acute Minor Illness Clinics (AMICS) to treat unappointed ambulatory outpatients through the use of printed manuals of medical algorithms. The present report (the second of four to be written) presents the findings regarding the questions concerning the extent, if any, to which this physician extender program (a) saves physicians' time and (b) is cost effective. The analyses indicated that the physician time required to treat the average patient in the traditional, physician-staffed general out-patient clinic (GOC) was significantly larger than the amount of physician time required to treat the average patient treated in an AMIC. The average cost per patient was determined by individualizing the treatment times by the hourly wage equivalents of the salaries of the principal care providers involved in the care of each patient. The analyses of this data indicated that AMIC-provided care was significantly less expensive than that of GOC-provided care at the level of physician care/consultation costs which would normally be encountered at such clinics. Additional clinic time parameters were also reported. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 127 13/2 14/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILL

Engineering and Design Cost/Rate  
Forecasting System. Volume I. Model  
Development and Data Analysis. (U)

DESCRIPTIVE NOTE: Final rept.,  
SEP 78 67P Neathammer, Robert D. ;  
REPT. NO. CERL-TR-P-94-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A061  
108.  
DESCRIPTORS: \*Construction, \*Cost estimates,  
Mathematical models, Forecasting, Rates,  
Computer programs, Army Corps of Engineers,  
Military facilities, Buildings, Computer graphics,  
Costs, Engineering, Mathematical prediction,  
Confidence limits (U)  
IDENTIFIERS: TEKTRONIX-4051 graphics system,  
Military construction, Design (U)

This report discusses the development of statistically based models for forecasting engineering and design (E/D) costs in order to establish military construction cost targets for Corps of Engineers Districts and Divisions. The model developed is programmed on the TEKTRONIX 4051 graphics system in the Office of the Chief of Engineers (OCE). When the model was verified, only one of 18 predictions was outside the prediction limits (95% confidence). The model is best used to project E/D costs 1 year in advance, and it is recommended that it be used to help establish cost targets for applicable Corps Divisions/Districts. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 108 13/2 14/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLEngineering and Design Cost/Rate  
Forecasting System. Volume II. User's  
Manual.

(U)

DESCRIPTIVE NOTE: Final rept..

SEP 78 24P Neathammer, Robert D. ;  
REPT. NO. CERL-TR-P-94-VOL-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A061  
127.DESCRIPTORS: \*Construction, \*Cost estimates,  
Computer programs, Mathematical models, Rates,  
Forecasting, Linear regression analyses, Army  
Corps of Engineers, Military facilities,  
Buildings, Computer graphics, Costs,  
Engineering, Mathematical prediction  
IDENTIFIERS: TEKTRONIX 4051 graphic system,  
Military construction, Design, User manuals,  
BASIC programming language

(U)

(U)

This volume describes the use of the Engineering  
and Design (E/D) Cost/Rate Forecasting  
System to maintain E/D data, to update the E/  
D forecasting model, and to forecast future E/D  
costs and rates. Volume I provides information on  
the model development and data analysis. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A060 912 15/5 14/1 12/2

STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH

Computation of the Optimal Average Cost  
Policy for the Two Terminal Shuttle.

(U)

DESCRIPTIVE NOTE: Technical rept..

APR 78 35P Deb, Rajat K. ;  
REPT. NO. TR-78

CONTRACT: N00014-76-C-0418. NSF-ENG75-14847

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Mass transportation, \*Operations  
research, \*Cost models, Terminals, Passengers,  
Traffic, Queueing theory, Markov processes,  
Dynamic programming, Optimization, Decision  
theory

(U)

IDENTIFIERS: MUNR047061

(U)

This paper considers the problem of determining the  
optimal average cost policy for operating a shuttle  
between two terminals. The passengers arrive at  
each of the terminals according to Poisson  
processes and are transported by a single carrier  
with capacity  $0 < \text{or} = \text{infinity}$  operating between  
the terminals. Under a fairly general cost  
structure, the optimal average cost policy is  
monotone. Bounds are derived for the optimal control  
function and computational procedures for determining  
the optimal policy for both the finite and infinite  
capacity cases are presented.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A060 819 5/3

STANFORD UNIV CALIF SYSTEMS OPTIMIZATION LAB

Are Dual Variables Prices. If Not. How  
to Make Them More So.

(U)

DESCRIPTIVE NOTE: Technical rept..

MAR 78 18P Dantzig, George B. ;

REPT. NO. SOL-78-6

CONTRACT: N00014-75-C-0267, Ev-76-S-03-0326-PA-  
18

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Contract Ey-  
76-S-03-C326-PA-52 and Grants NSF-WC576-81259 and  
NSF-ENG77-06761.

DESCRIPTORS: \*Economics, \*Price index, Linear  
systems, Variables

IDENTIFIERS: Prices, MUNR047143

(U)

(U)

Actual prices in an economy reflect a number of  
institutional arrangements -- salaries, savings,  
taxes, loans, interest, transfer payments, profits,  
rents, and investment credits. These can be quite  
different from prices generated by a L.P.  
(Linear Program). The price of an item in the  
L.P. is the change in the objective value if an  
additional unit of the item is made available to the  
system. An unfortunate consequence is that any  
capacity (or labor) not fully used gets a zero  
price. The purpose of this paper is to show how to  
make a simple perturbation to the linear program,  
after it has been solved, so that the now dual  
variables behave more like actual prices. To do  
this we will need three assumptions: (a) the  
unused part of capacity is worth zero and can be  
deleted from the system; (b) an infinitesimal  
epsilon part of the used capacity is malleable;  
(c) the value of capacity can be measured by  
deleting the malleable epsilon part and seeing what  
it is worth to put it back. We shall show that it  
is possible to associate new prices with the optimal  
solution to the perturbed linear program without  
changing the original optimal primal solution. The  
new prices remain invariant as the malleable epsilon  
part of used capacity tends to zero. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A060 772 15/5 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

Application of Life Cycle Costing  
Principles to Less than Major Programs.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 76 108P Culp, Joseph P. ; Novy,

Steven D. ;  
REPT. NO. AFIT-LSSR-6-785

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*management, \*Air  
Force procurement, Weapon systems, Trade off  
analyses, Theses, Models

(U)

IDENTIFIERS: Lessons learned

(U)

This study examined ten current life cycle cost  
(LCC) procurements of aircraft subsystems and  
equipment. The objectives of the research were to  
identify potential LCC problem areas, to  
consolidate lessons learned from past and on-going  
LCC-oriented programs, and to provide the basis for  
development of an improved and simplified LCC  
guidance document for the program manager. The  
methodology used was a combination of literature  
review and interviews with personnel within ASD  
currently responsible for various aspects of LCC.  
The interviews focused primarily on program  
managers, but included others involved with  
contracting, testing, engineering, and LCC  
modeling. The study is organized into areas  
covering early program considerations, models and  
data inputs, request for proposal and source  
selection, negotiation, contracting, and incentive  
considerations, LCC verification testing, and  
lessons learned. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A060 500 9/2 14/1

TEXAS A AND M UNIV COLLEGE STATION INST OF STATISTICS

Project Scheduling with Discontinuous  
Piecewise Convex Activity Cost Functions. (U)

DESCRIPTIVE NOTE: Technical rept.,  
 SIP 78 25P Robieux, Christian C. ;  
 Sielken, Robert L., Jr.;  
 REPT. NO. THEMIS-IR-61  
 CONTRACT: N00014-78-C-0426

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models, \*PERT, Nonlinear  
 programming, Functional analysis, Scheduling,  
 Optimization, Data reduction, Graphs (U)  
 IDENTIFIERS: Themis project, Project management,  
 Convex programming, WUNR047179 (U)

When an activity can be performed with different techniques, the activity cost function may be a discontinuous piecewise convex function of the activity's duration. This makes the determination of the minimum cost schedule satisfying a specified project deadline a nonconvex problem. However, if an activity may be performed using a combination of the different techniques, the concept of a convex hull can be used to transform the activity's cost function. The resulting convex problem can be solved by the existing PERT procedures. Therefore, this paper extends the applicability of existing PERT procedures to problems with discontinuous piecewise linear or piecewise convex activity cost functions. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A060 346 15/5 14/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

Acquisition Costing in the Federal  
Government. (U)

AUG 78 51P Cheslow, Richard T. ; Dever,  
 James R. ;  
 REPT. NO. LMI-77-15  
 CONTRACT: NDA903-77-C-0370

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Acquisition, \*Cost analysis,  
 Planning, Budgets, Procurement, Logistics,  
 Quality assurance, Standardization, Cost models,  
 Cost estimates (U)

The quality of acquisition costing in the Federal Government is generally good. Some problems exist but they can be solved by specific actions covering a small number of people or by expanding current programs, structures or techniques. The primary recommendation is that cost estimating, cost analysis and price analysis become a unified function and that each Department and Agency determine the most effective organizational location and career pattern for unified costing offices. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 863 10/2 14/1 15/5 21/7

ARMY TROOP SUPPORT AND AVIATION MATERIEL READINESS COMMAND  
ST LOUIS MOHistorical Escalation of Operation and  
Maintenance Costs for Field Generator  
Sets.

(U)

DESCRIPTIVE NOTE: Final rept. FY75-FY78.

JUL 78 36P Gille, Warren H. Jr;  
REPT. NO. TSARCOM-TR-78-7

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Electric generators. \*Cost analysis.  
field equipment. Maintenance management. Life  
cycle costs. Cost estimates. Operation. Cost  
models. Maintenance. Weighting functions. Price  
index. Contracts. Reciprocating engines. Diesel  
engines. Army procurement

(U)

This report updates the costs developed for  
Operating and Maintaining Generator Sets  
established by the Cost Estimating  
Relationships (CER's) in TRDSCOM Technical  
Report 74-12. The methodology employed is based  
on ratio and proportion analysis, wherein each  
individual component of Operating and Maintenance  
(O and M) Cost is updated using a specialized  
index. Then, the cost components are reaggreated  
into a revised O and M Cost, which more  
accurately reflects the actual cost than would  
escalation by a single gross factor. The report  
covers full load and half load operating costs for  
most common 60 HZ and 400 HZ Gasoline Engine  
Driven (GED) Generator Sets, and also those for  
common 60 HZ Diesel Engine Driven (DED)  
Generator Sets. The escalation factor for 400  
HZ DED Generator Sets is assumed to be the same  
as that for corresponding 60 HZ DED Generator  
Sets, using the previous TRDSCOM Tech Report  
74-12. The complete statement of methodology is  
included which allows the analysis to be adapted by  
the user to fit the specific time period desired.  
The Generator Sets referenced in this Tech  
Report are used to support various types of  
equipment; which means that the cost escalation  
factors provided should be of value in determining  
O and M Cost for generators used in a variety

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 767 5/1 5/9

ADJUTANT GENERAL CENTER WASHINGTON D C

Army Club Management Study 1977. Volume  
II. Appendices.

(U)

DESCRIPTIVE NOTE: Final rept.. Mar 77-Apr 78.  
APR 78 336P Batts, John H. ;Henderson,  
R. ;Lee, F. ;Belgrano, R. ;Welcher, J.

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A059  
833.DESCRIPTORS: \*Management planning and control. \*Cost  
analysis. \*Systems analysis. Military facilities.  
Personnel management. Army procurement. Army  
training

(U)

IDENTIFIERS: Club management. Army club  
management

(U)

The Army Club management Study 1977 was  
conducted to review forces impacting upon clubs in  
the current and future environment, evaluate the  
Army club system, examine and estimate alternative  
organizational structures for the management of  
Army clubs, address the cost impact of significant  
curtailment or withdrawal of appropriated fund  
support for clubs and the need to generate an Army-  
wide club facility improvement and construction  
program. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 571 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSA Cost Analysis on Procuring Improved  
Technical Order Data for the F-15 Weapon  
System.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 78 152P Bennett, Robert Wilmer ;  
Moravek, William D. K. ;

REPT. NO. AFIT-LSSR-27-78A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems. \*Aircraft maintenance.  
\*Cost analysis. Air Force procurement.  
Maintenance management. Maintenance personnel.  
Personnel management (U)IDENTIFIERS: F-16 aircraft, F-15 weapon  
system (U)

The United States Air Force has expressed strong interest in finding methods of reducing weapon system maintenance cost. One method is to increase the productivity of maintenance personnel by providing better technical data. High maintenance personnel cost makes it imperative that a more efficient, improved, proceduralized TO (PTO) format be developed and utilized. Due to the inherent advantages of PTOs, the F-15 Technical Order Management Agency manager is in the process of evaluating the cost of converting the F-15 TOS to the PTO format. A cost versus benefits analysis of the advantages and disadvantages of PTOs has been accomplished to assist top level management in deciding the appropriate type TO option to procure. To accomplish the analysis this thesis identifies the steps in the TO procurement process, explains the techniques used by McDonnell-Douglas Aircraft Company to develop cost estimates for the F-15 weapon system TOS, describes the advantages of procuring the F-15 weapon system TOS in the PTO format, and estimates where possible the monetary savings derived from the advantages of the improved PTO format. This thesis concludes that the F-15 weapon system technical data should be procured in the PTO format. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 567 16/4.2 14/1 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSForecasting Depot Overhaul Costs of  
Tactical Missile Guidance and Control  
Subsystems.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 78 97P Eichenberger, Joel D. ;  
Norville, Donald F. ;

REPT. NO. AFIT-LSSR-9-78A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air to air missiles. \*Air to surface  
missiles. \*Life cycle costs. \*Design to cost. Cost  
models. Guided missile components. Guidance.  
Flight control systems. Maintenance. Repair.  
Tactical weapons. Mathematical prediction.  
Estimates. Logistics support. Theses (U)

IAC ACCESSION NUMBER: GC-790217

IAC DOCUMENT TYPE: GACIAC -MICROFICHE--

Recently, increased emphasis has been placed on designing systems for supportability due to the significance of support costs on the total life cycle cost of the system. One of the most important contributors to tactical missile support costs is the cost of depot overhaul of guidance and control subsystems (GCS). Despite its importance, depot overhaul costs are not currently forecast by the operations and support cost model used by Warner Robins Air Logistics Center, the system manager for tactical missiles. Instead, the model requires an externally derived estimate of this cost as input data. However, accurate estimating techniques have not been developed to forecast the cost of tactical missile GCS depot overhaul during system development. The authors, using the technique of multiple linear regression (MLR), identified several physical characteristics of a GCS which are important determinants of depot overhaul cost. These important determinants were then used to develop a cost estimating relationship model for forecasting GCS depot overhaul cost during tactical missile system development. (Author)

(U)

IAC SUBJECT TERMS: G--(U)Guided missiles. Guided  
missile components. Guidance systems. Control systems.

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ZOM07



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z6W07

AD-A059 516 15/5

WESTINGHOUSE ELECTRIC CORP HUNT VALLEY MD

The Avionics Laboratory Predictive Operations and Support (ALPOS) Cost Model. Volume 2.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 77-Mar 78.

APR 78 159P Feltus, Erasmus E. :

CONTRACT: F33615-77-C-1105

PROJ: 2003

TASK: 09

MONITOR: AFAL TR-78-49-VOL-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3. AD-A059 354.

DESCRIPTORS: \*Avionics. \*Cost models. \*Cost estimates. \*Life cycle costs. \*Logistics support. Experimental design. Parameters. Mathematical prediction

(U)

IDENTIFIERS: ALPOS (Avionics Laboratory Predictive Operations and Support). PE62204F

(U)

Recent DOD experience shows that a prime factor in the evaluation of alternative weapon systems for performing a particular mission is Life Cycle Cost (LCC). Since 70% of the system LCC is determined by the end of the conceptual phase, it is important that techniques to predict LCC be available during the phase. Since system definition is not complete enough in this phase to perform detailed analysis using accounting models, the major tool which can be used is parametric estimating models. This report describes a model which relates the available design parameters to LCC via various cost estimating relationships (CERs). This document is Volume II of the Final Report which describes the mathematical and statistical techniques used to obtain the cost estimating relationships and parametric estimating relationships needed to develop the Avionics Laboratory Predictive Operations and Support (ALPOS) Cost Model. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z6W07

AD-A059 510 17/9 15/3 15/5

GENERAL ELECTRIC CO SYRACUSE NY ELECTRONIC SYSTEMS DIV

Unattended Radar Station Design for Dewline Application. Volume II.

(U)

DESCRIPTIVE NOTE: Final technical rept. 19 Jul-19 Dec 77.

JAN 78 245P Adriel, W. E. ; Bell, S. E. ; Gersten, E. J. ; Johnson, R. M. ; Morrow, D. J. :

CONTRACT: F19628-77-C-0212

MONITOR: ESO TR-78-176-Vol-2

## UNCLASSIFIED REPORT

DESCRIPTORS: Radar stations. \*Search radar. \*Early warning systems. \*Logistics support. \*Life cycle costs. Arctic regions. Ground stations. Area coverage. Tracking stations. Cost models. Installation. Reliability

(U)

IDENTIFIERS: Unattended radar stations. Availability. Distant early warning system

(U)

This report examines the feasibility of implementing and maintaining a string of Unattended Radar Stations in the Arctic. The study is conceptual relative to design, installation, operation, maintenance, and support of Unattended Stations and attendant problems such as security, reliability, maintainability, availability, and life cycle cost. Cost Drivers are identified and potential solution alternatives with recommendations presented. The conclusion is that, with reasonable development, economical Unattended Arctic Radar Stations are possible. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 354 15/5

WESTINGHOUSE ELECTRIC CORP HUNT VALLEY MD

The Avionics Laboratory Predictive Operations and Support (ALPOS) Cost Model Volume III.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 77-Mar 78, APR 78 39P Turek, John P.; Wienecke, E. Louis, III; Feltus, Erasmus E.; CONTRACT: F33615-77-C-1105 PROJ: 2003 TASK: 09 MONITOR: AFAL TR-78-49-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume I, AD-A059 164.

DESCRIPTORS: \*Avionics, \*Logistics support, \*Weapon systems, \*Life cycle costs, Cost estimates, Cost models, Predictions, Maintenance IDENTIFIERS: WUAFAL20030912, PEG2204F

(U)

(U)

Recent DOD experience shows that a prime factor in the evaluation of alternative weapon systems for performing a particular mission is Life Cycle Cost (LCC). Since 70% of the system LCC is determined by the end of the conceptual phase, it is important that techniques to predict LCC be available during that phase. Since system definition is not complete enough in this phase to perform detailed analysis using accounting models, the major tool which can be used is parametric estimating models. This report describes a model which relates the available design parameters to LCC via various cost estimating relationships (CERs). This document is Volume III of the Final Report which describes the consolidated data base utilized to develop the Avionics Laboratory Predictive Operations and Support (ALPOS) cost model. The Air Force Program Monitor was Lt Thomas T. James Jr. (AFAL/AAA-3), System Evaluation Group, Avionic Systems Engineering Branch. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 307 5/1 14/1 5/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

An Analysis of Forward Pricing Rates and Their Effectiveness in Indirect Cost Management.

(U)

DESCRIPTIVE NOTE: Master's thesis. JUN 78 111P Jones, Thomas G.; Volpe, Richard L.; REPT. NO. AFIT-LSSR-2-78A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Price index, \*Cost estimates, \*Cost effectiveness, Management planning and control, Cost analysis, Decision making, Military procurement, Rates

(U)

IDENTIFIERS: Overhead costs, Cost management

(U)

Overhead costs make up a substantial portion of the DOD dollars spent in the procurement of defense systems. Therefore, overhead control has become an area of special concern to government contract managers, and has spurred an increasing amount of manpower at the Air Force Plant Representative Offices, Air Force Contract Management Division, and Contract Maintenance Center Detachments to influence aerospace contractors toward greater efficiency and effectiveness in the area of indirect cost management. This study examined the current indirect cost estimating literature and procedures for establishing forward pricing rates for indirect costs. In addition, forward pricing rate data from various aerospace contractors were analyzed to determine whether there are significant trends or patterns among the forward pricing rates proposed by the contractor, the rates negotiated or recommended by the government, and the rates actually experienced by the contractor during the time period under study. The authors found that there is not a statistically significant difference among the rates proposed by the contractor, the rates negotiated or recommended by the government, and the rates actually experienced by the contractor. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 306 9/2 14/1 15/5

BATTELLE COLUMBUS LABS OHIO

Life Cycle Cost Analysis of Instruction-  
Set Architecture Standardization for Military  
Computer-Based Systems.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUL 78 128P Stone, Harold S. ;

CONTRACT: DAAG29-76-D-0100

PROJ: 1L162701AH92

TASK: B1

MONITOR: CORADCOM 78-8

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with  
California Univ.

DESCRIPTORS: \*Computer architecture, \*Life cycle  
costs, Cost analysis, Computer programs,  
Standardization, Cost models, AN/UYK-7, AN/  
UYK-20, AN/GYQ-21, Army procurement, Army  
equipment, Army planning  
IDENTIFIERS: AN/UYK-12, AN/UYK-19;  
PEG2701A, ASH92

(U)

(U)

A life cycle cost analysis of 78 Army/Navy  
military computer-based systems is described in order  
to determine the most cost-effective approach to  
standardization of computer (instruction-set)  
architectures. Two basic instruction-set  
architecture scenarios are considered: (1)  
standardization upon four widely used military  
computer architectures (AN/UYK-7, AN/UYK-20,  
AN/UYK-19 and AN/GYQ-12) as computer family  
architectures (CFA's) and (2)  
standardization upon a single CFA. The single-  
CFA scenario is further subdivided into five  
candidate architectures; i.e. aforementioned four  
architectures plus AN/GYQ-21 (PDP-11). The  
life cycle cost model provides for acquisition of the  
78 systems in lots of 26 in 1980, 1985 and 1990 and  
for subsequent deployment over a 10-year period.  
Military Computer Family (MCF) modules and  
chassis are employed in all architecture scenarios.  
Total life cycle cost is defined as the sum of  
common life cycle cost, hardware life cycle cost of  
all 78 systems and applications software life cycle  
cost of all 78 systems.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 290 5/1 15/5 14/1

ARMY AVIATION RESEARCH AND DEVELOPMENT COMMAND ST LOUIS  
MO

Development of a Field Labor Rate for Army  
Aviation Maintenance.

(U)

DESCRIPTIVE NOTE: Final rept.,

AUG 78 133P Krueger, Earl A. ; Bodden,

William E. ;

REPT. NO. USAAVRADCOM-TR-78-40

UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft maintenance, \*Labor,  
\*Maintenance personnel, \*Cost analysis, Army  
personnel, Maintenance management, Manpower,  
Economic analysis, Army aviation, Requirements,  
Costs

(U)

IDENTIFIERS: Field Labor Rates

(U)

An hourly Labor Rate is developed in this paper  
for a Generic Army direct maintenance person.  
Weighted averages, based on current AVUM and  
AVIM TOE's, are utilized to determine the rank,  
MOS, and flying status of this generic maintenance  
person. The total cost per man per year is  
calculated in accordance with the cost categories specified in  
DA Pamphlet 11-4. Productive man hours per year  
(peacetime) are estimated utilizing current  
estimated maintenance man hour requirements,  
available man hours per year (combat) and current  
authorized and required manning for TOE's. The  
resulting hourly labor rate should be usable in  
Economic Analyses and minor cost studies.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 283 5/3 12/1

SRI INTERNATIONAL ARLINGTON VA STRATEGIC STUDIES  
CENTERDeflation of the 18 Sector Soviet Input-  
Output Tables.

(U)

DESCRIPTIVE NOTE: Final rept.,  
AUG 78 84P Guill, Gene D. ;  
REPT. NO. SSC-TN-5943-4  
CONTRACT: 77-B004691-000

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Economic models, \*Price index,  
\*Input output models, \*USSR,  
Inflation(Economics), Tables(Data),  
Algorithms, Estimates, Interpolation,  
Coefficients, Matrices(Mathematics), Weighting  
functions, Industrial production, Agriculture,  
Transportation, Econometrics, Macroeconomics  
IDENTIFIERS: LPN-SRI-5943

(U)  
(U)

This technical note represents research undertaken  
for the SSC's Soviet and Comparative  
Economics Program in the further development of  
the SRI-WEFA Econometric Model of the  
Soviet Union. This report describes work on  
deflating a series of input-output tables in  
producers' prices generated for the SRI-WEFA  
model and aimed at facilitating the better  
integration of the input-output component of that  
model with the macroequation system, the latter  
operating with constant 1970 prices.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 224 13/10 5/1

GEORGE WASHINGTON UNIV WASHINGTON D C PROGRAM IN  
LOGISTICSThe Labor Market of the United States  
Shipbuilding Industry. 1960-1970.

(U)

DESCRIPTIVE NOTE: Scientific rept.,  
JUN 78 181P Martin, John Charles :  
REPT. NO. SERIAL-T-363  
CONTRACT: N000014-75-C-0729

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Doctoral thesis.  
DESCRIPTORS: \*Shipbuilding, \*Labor, \*Cost  
analysis, \*Attrition, Losses, Geographical  
distribution, Costs, Manpower, Impact,  
Industries, Naval personnel, Theses  
IDENTIFIERS: Labor market, Wages,  
WUNR347020

(U)  
(U)

This study presents a detailed analysis of the  
labor market of the United States shipbuilding  
industry. Primary emphasis is given to the wage  
rates and earnings in shipbuilding and their apparent  
impact on industry turnover and mobility. It  
appears that the noncompetitive wages and earnings of  
older, more experienced workers in shipbuilding  
results in a loss of these workers to the  
construction and durable manufacturing industries.  
To correct this loss, the findings suggest that the  
wage of older, more experienced shipbuilding workers  
be increased to levels competitive with those in  
other industries. In part, the resulting higher  
wage costs can be offset by dampening pay increases  
of young workers and through reduced training costs  
and improved productivity. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 222 9/2 5/3 17/9

MITRE CORP BEDFORD MASS

SEEK IGLOO Life Cycle Cost Model. Volume  
II. User's Manual. (U)

DESCRIPTIVE NOTE: Technical rept..

JUL 78 159P Ferraiolo, J. K. ; James, J.

H. ; Moynihan, R. A. ;

REPT. NO. MTR-3577-VOL-2

CONTRACT: F19628-78-C-0001

MONITOR: ESU TR-78-155-VOL-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, AD-A058  
632.DESCRIPTORS: \*Programming manuals, \*Life cycle  
costs, \*Radar stations, \*User needs, Surveillance,  
Mathematical models, Maintenance, Interactive  
graphics, Computer applications, Subroutines,  
Computer programs (U)IDENTIFIERS: \*SEEK IGLOO radar, SEEK IGLOO  
project, LPN-Mitre-6260 (U)

An interactive Life Cycle Cost (LCC) mathematical model with a built-in sensitivity analysis capability has been developed for use in the evaluation of proposed designs for the Air Force SEEK IGLOO Radar System. This User's Manual provides the information necessary to run the computerized LCC Model effectively. In addition, a complete discussion of the particular Cost Elements used to calculate Life Cycle Cost is given in Appendix C, and the sensitivity analysis component of the LCC Model is presented in Appendix D. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 188 13/9 1/3

HONEYWELL INC ST LOUIS PARK MN AVIONICS DIV

Investigation of a Low-Cost Servoactuator for  
HYSAS. (U)

DESCRIPTIVE NOTE: Final rept. Apr 77-Mar 78.

JUL 78 90P Hedeem, James O. ;

REPT. NO. W0597-FR

CONTRACT: DAAJ02-77-C-0025

PROJ: 1L162114AH73

TASK: 00

MONITOR: USARTL TR-78-30

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Actuators, \*Servomechanisms, Low  
costs, Performance tests, Test and evaluation,  
Helicopters, Fluidic amplifiers, Valves,  
Cylindrical bodies, Breadboard models, Fluid  
mechanics (U)IDENTIFIERS: HYSAS (Helicopter Hydrofluidic  
Stability Augmentation System), Helicopter  
hydrofluidic stability augmentation system,  
Servoactuators, Spool valve, Spring centered  
cylinder, WU001, PE62114A (U)

This document covers the design and testing of a fluidic input servoactuator to perform the series servoactuator function in a helicopter hydrofluidic stability augmentation system (HYSAS). The servoactuator consists of a two-stage fluidic amplifier cascade driving a conventional spool valve that positions a spring-centered cylinder. Simplicity and minimum cost commensurate with essential servoactuator performance was the design goal. A breadboard model servoactuator was designed, fabricated, and bench tested to evaluate feasibility. Servoactuator performance objectives were met at nominal supply conditions, but not over the complete operational oil temperature range. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A059 184 5/1 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSAnalysis and Computation of a Base Labor  
Rate for Cost Models of Major Weapon  
System Acquisition.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 78 73P Knuth, Dale E. ; Unger.  
Robert F. ;  
REPT. NO. AFIT-LSSR-21-78A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Labor, \*Cost analysis, \*Cost models,  
Rates, Costs, Theses, Weapon systems,  
Acquisition, Air Force personnel

(U)

IDENTIFIERS: Full cost approach, Maintenance cost  
system, Base labor rates, Indirect costs, Direct  
costs

(U)

The purpose of this thesis was to analyze and compare the Base Labor Rates determined by the full cost approach versus the Maintenance Cost System. If the labor rates were determined to closely approximate each other, then the MCS would be an efficient way to obtain a base level maintenance labor rate. Two bases in the Southeastern United States which support transport aircraft were studied. The elements of cost which make up the Depot Labor Rate were used to facilitate the full cost of the Base Labor Rate. The elements of cost were subdivided into three categories--direct labor, indirect labor, and overhead. The summation of these elements were divided by the manhours available to determine a labor rate. This rate was compared to the rate derived from the MCS. The rates were comparable at one base, but not at the other. The results were inconclusive and further study was recommended. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A059 183 15/3 14/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSA Conceptual Model of the Department of  
Defense Major System Acquisition  
Process.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 78 137P Lawson, Diann ; Osterhus.  
Diamond L. ;  
REPT. NO. AFIT-LSSR-20-78A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Acquisition,  
\*Models, Systems analysis, Procurement, Theses,  
Costs, Performance (Engineering)

(U)

IDENTIFIERS: Cost escalation, Inadequate  
performance

(U)

The Department of Defense's weapon system acquisition process has come under increasing scrutiny by Congress in the last two decades because of increased cost and inadequate performance of its new weapon systems. Many studies have been made on specific aspects of the acquisition process to improve acquisition strategies. As a result, constant changes have been made in the process in an attempt to eliminate problems. However, none of the changes have significantly improved the process. The problem of developing and implementing effective solutions to the acquisition process appear to stem not from valid research but from a lack of understanding of the total system and the environment in which the process operates. The Federal Procurement Institute expressed the desire for a model that would depict the contextual setting of the acquisition process to aid in formulating changes to the process using current research and in directing future research. The authors present a conceptual model of the DoD acquisition process that incorporates the contextual setting of the process, describes the major interactive factors, and captures the influences of these factors on each other as well as on the entire process. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 182 14/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSAutomatic Test Equipment Software Life  
Cycle Cost Simulation Model Validation.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 78 150P Novak, Frederick V.; Winters,

Henry, Jr;

REPT. NO. AFIT-LSSR-16-78A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Test equipment,  
Automatic, Simulation, Models, Validation,  
Regression analysis, Computer programs, Theses

(U)

This thesis concerns validating a model, developed in 1973 by Air Force Institute of Technology students, Captains Wilson and Morton, which was designed to aid managers in predicting acquisition and support costs of Automatic Test Equipment (ATE) software. The validation effort used the method of differences for coding nominal level data obtained from interviews of software programmers, and analysis of variance and multiple linear regression to derive a relationship between a manhours correction factor, the dependent variable, and Language, Documentation, and Training, the independent variables. Outputs of the model were compared against manhours from historical data on ATE software in the C-5A, B-52, F-111, and F-4 weapon systems. The model's systems parameters were updated, model outputs were changed using FORTRAN statements, and all tables were graphed. Model control cards were changed for compatibility with General Purpose Simulation System 6000 version 2 on the Headquarters Air Force Logistics Command CREATE computer system. The authors concluded the model's predictive capability was good only to a 30% accuracy. Because of major changes in the software life cycle, the model should be restructured before it is used to estimate the cost of ATE software.

(Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 169 5/3

SRI INTERNATIONAL ARLINGTON VA STRATEGIC STUDIES  
CENTERPrice Indexes for Soviet 18-Sector Input-  
Output Tables for 1959-1975.

(U)

DESCRIPTIVE NOTE: Final rept..

JUN 78 112P Tremi, Vladimir G. :

REPT. NO. SSC-TN-5943-1

CONTRACT: 77-B004691-000

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Price index, \*Conversion,  
Information processing, Tables(Data), USSR,  
Construction, Transportation, Agriculture,  
Distribution, Economics)

(U)

IDENTIFIERS: Input output tables, Agricultural  
subsidies, LPN-SCI-5943

(U)

This report presents price indexes and supplementary information needed for the conversion of a series of 18-sector Soviet input-output tables in producers' prices for 1959-1975 from current to constant 1970 prices. Appendices present the derivation and documentation of indexes for the industrial sectors, construction, transportation and distribution services, and agriculture. A final appendix describes and documents adjustments needed due to agricultural subsidies. (Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 164 1/3 5/1

WESTINGHOUSE ELECTRIC CORP HUNT VALLEY MD

The Avionics Laboratory Predictive Operations and Support (ALPOS) Cost Model. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 77-Mar 78.  
APR 78 182P Turek, John P.; Louis  
Wienecke, E., III; Feltus, Erasmus E.;  
CONTRACT: F33615-77-C-1105  
PROJ: 2003  
TASK: 09  
MONITOR: AFAL TR-78-49-VOL-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Avionics. \*Cost estimates. \*Cost models. Life cycle costs. Computer applications. Predictions. Air Force planning. Logistics support. Operations research. Computer programs. FORTRAN

IDENTIFIERS: NUAFAI20030912, PE62204F

(U)

(U)

Recent DOD experience shows that a prime factor in the evaluation of alternative weapon systems for performing a particular mission is Life Cycle (LCC). Since 70% of the system LCC is determined by the end of the conceptual phase, it is important that techniques to predict LCC be available during that phase. Since system definition is not complete enough in this phase to perform detailed analysis using accounting models, the major tool which can be used is parametric estimating models. This report describes a model which relates the available design parameters to LCC via various cost estimating relationships (CERs). This document is Volume I of the Final Report which describes the development of a model for the Air Force Avionics Laboratory, the Avionics Laboratory Predictive Operations and Support (ALPOS) Cost Model. The ALPOS model's CERs are utilized to estimate operating and support costs of avionics line replaceable units (LRUs). The Air Force Program Monitor was Lt Thomas G. James, Jr., System Evaluation Group (AFAL/AAA-3); Avionic Systems Engineering Branch. (Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 008 1/5 9/2 14/1

ARINC RESEARCH CORP ANNAPOLIS MD

User Delay Cost Model and Facilities Maintenance Cost Model for a Terminal Control Area. Volume III. User's Manual and Program Documentation for the Facilities Maintenance Cost Model.

(U)

DESCRIPTIVE NOTE: Final rept. Mar-Sep 76.  
MAY 78 49P Greene, L. B.; Witt, J.;  
Sternberg-Powidzki, M.;  
CONTRACT: DOT-YSC-1173  
MONITOR: FAA-AFF.TSC 220-78-01-3.FAA-78-1.3

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume I. AD-A059 007.

DESCRIPTORS: \*Air traffic control terminal areas. \*Cost models. \*Computerized simulation. \*Computer programs. Manuals. Delay. Scheduling. Maintenance management. Approach. Preventive maintenance. Manpower. Cost analysis. Test and evaluation. Weather forecasting

(U)

IDENTIFIERS: Boston Terminal Control Area. User delay cost model. UDCM (User Delay Cost Model)

(U)

The Facilities Maintenance Cost Model (FMCN) is an analytic model designed to calculate expected annual labor costs of maintenance within a given FAA maintenance sector. The model is programmed in FORTRAN IV and has been demonstrated on the CDC Kronos time-sharing system. Model inputs are facility identification data, maintenance support scenarios, and facility reliability and maintainability data. The principal model outputs include the expected annual direct labor and salary costs of maintaining a specific facility type within a sector, the required number of personnel by skill level for that facility type, the costs of preventive maintenance and corrective maintenance, and the costs of call-backs. The model also provides total cost and labor data on all of the facilities within the sector. This is the third of three volumes. Volume I documents the model formulation and demonstration. Volume II is a user's manual and contains the program documentation (U)

AD-A059 008



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 007 1/5 14/1 9/2

ARINC RESEARCH CORP ANNAPOLIS MD

User Delay Cost Model and Facilities  
Maintenance Cost Model for a Terminal  
Control Area. Volume I. Model  
Formulation and Demonstration.

(U)

DESCRIPTIVE NOTE: Final rept. Mar-Sep 76.

MAY 78 125P Greene, L. B.; Witt, J. J.

Sternberg-Powidzki, M. ;

CONTRACT: DOT-TSC-1173-1

MONITOR: FAA-AAF, TSC 220-78-01-1, FAA-78-1.1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A058 984.

DESCRIPTORS: \*Air traffic control terminal areas,  
\*Cost models, \*Computerized simulation,  
Maintenance management, Delay, Scheduling,  
Approach, Preventive maintenance, Manpower, Cost  
analysis, Test and evaluation, Weather  
forecasting

(U)

IDENTIFIERS: User delay cost model, UDCM (User  
Delay Cost Model), Boston Terminal  
Control Area, FMCM (Facility Maintenance Cost  
Model), Facility maintenance cost model

(U)

The User Delay Cost Model (UDCM) is a Monte Carlo computer simulation of essential aspects of Terminal Control Area (TCA) air traffic movements that would be affected by facility outages. The model can also evaluate delay effects due to other factors, such as weather, aircraft schedule intensity, and approach minima. Although the Boston TCA was selected as the study vehicle for development and demonstration, the model is structured so that it can be applied to other TCAs. The Facility Maintenance Cost Model (FMCM) is designed to evaluate the expected annual labor cost of maintaining FAA facilities within a maintenance sector. The model was developed for time-share computer application and can evaluate both the preventive maintenance and corrective maintenance required by any single facility (e.g., a visual omni-range or VOR), accumulate staffing and cost data on similar facilities (e.g., all VORs) within the specified maintenance sector.

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 984 1/5 14/1 9/2

ARINC RESEARCH CORP ANNAPOLIS MD

User Delay Cost Model and Facilities  
Maintenance Cost Model for a Terminal  
Control Area. Volume II. User's Manual  
and Program Documentation for the User Delay  
Cost Model.

(U)

DESCRIPTIVE NOTE: Final rept. May-Sep 76.

MAY 78 195P Greene, L. B.; Witt, J. J. ;

Sternberg-Powidzki, M. ;

CONTRACT: DOT-TSC-1173

MONITOR: FAA-AAF, TSC 220-78-01-2, FAA-78-1.2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3. AD-A059 008.

DESCRIPTORS: \*Air traffic control terminal areas,  
\*Cost models, \*Computerized simulation, \*Computer  
programs, Manuals, Delay, Scheduling,  
Maintenance management, Approach, Preventive  
maintenance, Manpower, Cost analysis, Test and  
evaluation, Weather forecasting

(U)

IDENTIFIERS: Boston terminal control area, User  
delay cost model, UDCM (User Delay Cost  
Model)

(U)

The User Delay Cost Model (UDCM) is a Monte Carlo simulation of certain classes of movement of air traffic in the Boston Terminal Control Area (TCA). It incorporates a weather module, an aircraft generation module, a facilities module, and an air control module to simulate delays resulting from facility outage, imposed on four user classes: Air Carrier, Air Taxi, General Aviation, and Military Aircraft. The model can also be used to measure delays due to changing aircraft arrival rates, weather and other environmental considerations, approach types available, or any other factor that affects trail separation in final approach of the maximum number of aircraft an air controller can handle. This is the second of three volumes. Volume I documented the model formulation and demonstration. Volume III is a user's manual and program documentation for the facilities maintenance cost model. (Author)

(U)

AD-A058 984

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 876 12/1 14/1

BROWN UNIV PROVIDENCE R 1 DIV OF APPLIED MATHEMATICS

Approximation Methods for the Minimum Average  
Cost Per Unit Time Problem with a  
Diffusion Model.

(U)

DESCRIPTIVE NOTE: Interim rept.,  
78 25P Kushner, Harold J. ;  
CONTRACT: N00014-76-C-0279, AFOSR-76-3063  
PROJ: 2304  
TASK: A1  
MONITOR: AFOSR TR-78-1359

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
SUPPLEMENTARY NOTE: Sponsored in part by grant NSF-  
ENG73-03846.

DESCRIPTORS: \*Control theory, \*Cost analysis,  
Diffusion theory, Dynamic programming,  
Approximation(Mathematics), Functional analysis,  
Markov processes, Weak convergence, Optimization,  
Covariance  
IDENTIFIERS: Martingales, Wiener processes,  
PE61102F, WUAFOSR2304A1

(U)

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Approximation methods for the minimum average cost  
per unit time problem with a controlled diffusion  
model is treated. In order to work with a bounded  
state space, the reflecting diffusion model of  
Strook and Varadhan is used, although other  
models can also be treated. The control problem is  
approximated by an average cost per unit time problem  
for a Markov chain, and weak convergence methods  
are used to show convergence of the minimum costs to  
that for the optimal diffusion. The procedure is  
quite natural and allows the approximation of many  
interesting functionals of the optimal process.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 632 9/2 5/3 17/9 15/5

MITRE CORP BEDFORD MASS

SEEK IGLOO Life Cycle Cost Model. Volume  
III. Maintenance Manual.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
JUL 78 157P Ferraiolo, J. K. ;  
REPT. NO. MTR-3577-VOL-3  
CONTRACT: F19628-78-C-0001  
MONITOR: ESO TR-78-155-VOL-3

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Programming manuals, \*Life cycle  
costs, \*Computer programs, Maintenance, Radar  
equipment, Mathematical models, Computer  
applications, Fortran, Interactive graphics,  
Subroutines, Input Output processing  
IDENTIFIERS: Seek igloo radar, Seek igloo project,  
LPN-Mitre-6260

(U)

(U)

An interactive Life Cycle Cost (LCC)  
mathematical model with a built-in sensitivity  
analysis capability has been developed for use in the  
evaluation of proposed designs for the Air Force  
SEEK IGLOO Radar System. This  
Maintenance Manual provides the information  
necessary to maintain, or possibly modify, the  
FORTRAN code of the LCC Model. It contains a  
complete discussion of the structure, conventions,  
subroutines, etc., of the LCC Model computer  
program. A complete listing of the FORTRAN code  
of the LCC Model, which contains extensive  
internal comments, is included in the Maintenance  
Manual. (Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 575 5/4 14/1

ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH  
KANSOptimizing the Cost Effectiveness of Military  
Corrections; An Assessment of Program  
Evaluations and Related Data.

(U)

DESCRIPTIVE NOTE: Final rept..

JUN 78 165P Embert, Paul S. . Jr;

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: \*Cost effectiveness. \*Corrections.

\*Military law. \*Criminal justice system.  
Optimization. Theses. Confinement (General).  
Punishment. Rehabilitation

(U)

IDENTIFIERS: Program evaluation. Program  
assessment. Military corrections. Civil suit

(U)

This study attempted to identify possible changes to the overall military corrections system and determine which are cost effective and feasible. Methodologically, the research entailed ex post facto research, coupled with unstructured observations. Program evaluations and observations provided original data; assessments of evaluations allowed consideration of more material than was directly possible during the time allotted for the effort. Adoption of a crime prevention model and development of a correctional decision model provided structure to the research. Investigation revealed that there are a variety of means whereby correctional expenditures can be decreased, without significant adverse consequences to society, military discipline, or criminal recidivism. These include adaptation of new correctional approaches and modifications within the existing system. Several other general and specific conclusions resulted in the formulation of a decisional matrix, which can be used as an aid in evaluating various correctional alternatives. The inquiry also revealed a lack of a clearly defined correctional objective, which detracts from cost effective or cost benefit analyses of the options available to the military, as well as other issues warranting further exploration.

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AD-A058 575

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 559 15/2 12/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLMethodology for Establishing Equipment  
Utilization Standards.

(U)

DESCRIPTIVE NOTE: Interim rept..

JUL 78 83P Lindow, Edward S. ;

Chovichien, V. ;

REPT. NO. CERL-IR-M-247

PROJ: 4A762731AT41

TASK: 09

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army equipment. \*Mathematical models.  
Utilization. Management. Standards. Economic  
analysis. Costs. Automation. Sensitivity.

(U)

Optimization  
IDENTIFIERS: Model parameters. Ownership costs.  
Operating costs. WU031. AST41. PE62731A

(U)

This report describes the first phase of a project designed to aid Army Facilities Engineers in improving equipment management. A rational basis for establishing equipment utilization standards was developed based on economic analyses of owning and operating costs. Mathematical models and automated procedures for their application are presented to compute minimum and objective utilization standards for equipment categories. Sample results are provided and the sensitivity of the model parameters is evaluated. Recommendations for implementing the utilization standards are also given. Results can be used in an equipment management program to establish uniform criteria for justifying equipment ownership and for gauging optimal equipment utilization. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 335 5/9

ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH  
KANS

The Aviation Career Incentive Act of  
1974: An Analysis of Short-Range Results  
in the United States Air Force, 1974-1977.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUN 78 97P McAlear, Kenneth E. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: \*Aeronautics, \*Aviation personnel,  
\*Careers, \*Retention(General), \*Costs,

\*Pilots, \*Navigators, Policies, Systems  
analysis, Air Force research, Air Force  
personnel, Officer personnel, Inequalities. The  
IDENTIFIERS: Aviation Career Incentive Act  
1974, Flight pay system, Gate system

(U)

(U)

This study analyzes the effects of the new flight  
pay system embodied in the Aviation Career  
Incentive Act of 1974 as it applies to rated  
Air Force officers. The analysis examines data  
on attraction, retention, cost, and workability of  
the gate system in an effort to determine if the  
Act is meeting its goals and objectives. This  
paper also discusses inequities in flight pay  
systems, past and present. Analysis reveals that  
the Act is not the panacea that Congress thought  
it would be. Attraction to a flying career, while  
still not a problem, has apparently not been effected  
by the Act. Retention of young pilots and  
navigators has not improved appreciably, if at all,  
since passage of the Act. Costs for flight pay in  
the Air Force have gone down, but so has the size  
of the force. While most rated officers are  
currently meeting their gates, this may not be  
indicative of future results due to liberal  
implementing, credit policies and the gradual decline  
of flying opportunities. While this analysis is  
based on a short period of time, the results indicate  
a need for close monitoring and re-examination of the  
flight pay system by the U.S. Air Force.

(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 278 5/1 13/8 19/1

DAYRON CORP ORLANDO FLA

Production Engineering Program to Develop  
Improved Mass-Production Process for M42/  
M46 Grenade Bodies.

(U)

DESCRIPTIVE NOTE: Final rept.

MAR 78 87P  
CONTRACT: DAAK10-77-C-0050

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Original contains color plates:  
All DDC reproductions will be in black and white.

DESCRIPTORS: \*Grenades, \*Manufacturing,  
\*Production engineering, \*Cost effectiveness,  
Engineering, Mass flow, Costs, Army equipment,  
Flow charting, Reliability, Safety, Munitions  
industry, Quality assurance

(U)

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IDENTIFIERS: M42 grenades, M46 Grenades

This report describes the work performed by  
Dayron Corporation under Contract DAAK10-77-  
C-0050 for the development of a new process for  
manufacturing M42/M46 grenade bodies at reduced  
cost without jeopardizing munition effectiveness,  
safety or reliability.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 273 5/1 14/1 15/5

CALIFORNIA UNIV LOS ANGELES WESTERN MANAGEMENT SCIENCE  
INSTMaking Better Use of Optimization  
Capability in Distribution System Planning.

(U)

JAN 78 46P Geoffrion, Arthur M. :  
REPT. NO. WMSI-WORKING PAPER-273  
CONTRACT: N00014-75-C-0570

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Portions presented at the ORSA/  
TIMS/AIIE Distribution Conference, Feb 78,  
Hilton Head, SC.DESCRIPTORS: \*Distribution, \*Optimization,  
\*Planning, \*Costs, \*Logistics, Facilities,  
Sensitivity, Systems analysis, Industries, Food,  
Automotive components, Mines(Excavations),  
Mathematical analysisIDENTIFIERS: Consumer products, Distribution  
systems

(U)

(U)

To have an efficient optimization technique for a class of problems is to have no more than a tool. Like any tool, it can be used well or poorly. This paper is about how to use one such tool for distribution planning problems (see the companion piece by A. Geoffrion, G. Graves and L. Lee, 'Strategic Distribution System Planning: A Status Report,' Working Paper 272A, March 1978). Discussion centers on four topics of importance in practical applications: the relationship between system cost and the number of distribution facilities, sensitivity analysis, robustness analysis, and implementation priority analysis. Each of these topics requires the use of optimization in ways that are somewhat less than obvious. Several illustrations are drawn from actual applications in the auto parts, consumer products, food, and mining industries. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 272 14/1 17/7

SYSTEMS CONTROL INC PALO ALTO CALIF

Economic Requirements Analysis of Civil Air  
Navigation Alternatives. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. on Task 9.  
APR 78 96P Solomon, H. L. :  
CONTRACT: DOT-FA75WA-3662  
MONITOR: FAA-ASP 76-3-VOL-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A058  
228.DESCRIPTORS: \*Navigation, \*Life cycle costs,  
\*Economic analysis, \*Cost effectiveness, Test and  
evaluation, Models, Computer programs, Costs,  
Systems analysis, Alaska, Offshore, Impact,  
Civil aviation, Loran, Omega navigation,  
Avionics

(U)

IDENTIFIERS: Navigation systems, CONUS, DME  
guidance, Loran-C, GPS(Global Positioning  
System), VOR navigation

(U)

This report summarizes a study whose objectives were to: Develop a life cycle cost computer model to evaluate various alternative civil aviation navigation systems; Project government implementation and recurring costs and user avionics costs associated with each alternative; Develop rational implementation/transition scenarios for various combinations of the systems to provide civil air navigation coverage in the CONUS, Alaska, Oceanic and Off-shore regions; and Make an initial assessment of the economic impact upon the FAA and civil aviation users for each scenario. Alternatives evaluated were VOR/DME, Loran-C, Omega, Differential Omega, and GPS. The least costly alternative, based upon combined civil user and FAA costs, was found to be continued use of VOR/DME. Sole use of GPS was found to be the most costly alternative.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 250 5/1 5/3

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN DIEGO  
CALIF

Life Cycle Navy Enlisted Billet Costs--  
FY78.

(U)

DESCRIPTIVE NOTE: Special rept.,  
JUN 78 36P Martin, Jim I.; Koehner,  
Ernest A.; Mairs, Lee S.;  
REPT. NO. NPRDC-SR-78-14  
PROJ: Z0109  
TASK: Z0109PN

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes Rept. no. NPRDC-SR-  
77-16 dated Sep 77.

DESCRIPTORS: \*Life cycle costs,  
\*Billets(Personnel), \*Enlisted personnel, Life  
cycles, Naval shore facilities,  
Housing(Dwellings), Naval personnel, Manpower,  
Personnel management, Mathematical models, Systems  
engineering, Systems management, Design to cost,  
Cost models

IDENTIFIERS: PE63707N, WU20109PN03

(U)

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This report is the second in a series designed to  
provide hardware system managers, systems designers,  
and design engineers with objective manpower  
resources and life-cycle billet cost data upon which  
to base design decisions. It supersedes the first  
report is: JED--NPRDC Special Report 77-16 of  
September 1977, which presented life-cycle Navy  
enlisted billet costs based on FY77 data. Other  
design tools being developed under this effort are  
listed in the section entitled 'Future Plans.'

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 228 14/1 17/7

SYSTEMS CONTROL INC PALO ALTO CALIF

Economic Requirements Analysis of Civil Air  
Navigation Alternatives. Volume II.

(U)

DESCRIPTIVE NOTE: Final rept..  
APR 78 409P Solomon, H. L.;  
CONTACT: DOT-FA75WA-3662  
MONITOR: FAA ASP-75-3-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A058  
272.

DESCRIPTORS: \*Navigation, \*Life cycle costs,  
\*Economic analysis, \*Cost effectiveness, Test and  
evaluation, Models, Computer programs, Costs,  
Systems analysis, Alaska, Offshore, Impact,  
Civil aviation, Loran, Omega-navigation,  
Avionics

(U)

IDENTIFIERS: Navigation systems, Conus, DME  
guidance, Loran-C, GPS(Global Positioning  
System), VOR navigation

(U)

This report summarizes a study whose objectives  
were to: Develop a life cycle cost computer  
model to evaluate various alternative civil aviation  
navigation systems; Project government  
implementation and recurring costs and user avionics  
costs associated with each alternative; Develop  
rational implementation/transition scenarios for  
various combinations of the systems to provide civil  
air navigation coverage in the CONUS, Alaska,  
Oceanic and Off-shore regions; and Make an  
initial assessment of the economic impact upon the  
FAA and civil aviation users for each scenario.  
Alternatives evaluated were VOR/DME, Loran-  
C, Omega, Differential Omega, and GPS.  
The least costly alternative, based upon combined  
civil user and FAA costs, was found to be continued  
use of VOR/DME. Sole use of GPS was found to  
be the most costly alternative.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 225 9/3

CALIFORNIA UNIV BERKELEY ELECTRONICS RESEARCH LAB

Applications of Analog Sampled Data Signal  
Processing to Low-Cost Speech Bandwidth  
Compression.

(U)

DESCRIPTIVE NOTE: Semi-annual rept. for period ending 1  
Mar 78.

78 11P

Brodersen, R. W.; Gray, P.

R. ;  
CONTRACT: N00173-77-C-0238, ARPA Order-3424

UNCLASSIFIED REPORT

DESCRIPTORS: \*Vocoders, \*Speech compression,  
Analog systems, Low costs, Narrowband, Signal  
processing, Analog to digital converters,  
Correlation techniques, Delay lines, Low pass  
filters

IDENTIFIERS: Large Scale Integration

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The basic objective of this contract is to apply  
MOS-LSI techniques to the problem of narrow band  
vocoding. In particular, analog sampled data  
techniques are being used to implement the high speed  
processing required in an autocorrelation type linear  
predictive coder (LPC) and decoder. The remaining  
processing will then be performed in a relatively low  
speed (and therefore low cost) microprocessors.  
Also important in a complete narrow band vocoder is  
a pitch tracker. The method being investigated for  
this function is a modified version of the Gold-  
Rabiner time domain algorithm implemented using a  
hybrid analog-digital approach. This report will be  
a brief summary of the present state of the work on  
the above three components of a complete LPC  
vocoder.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 137 12/2

GEORGE WASHINGTON UNIV WASHINGTON D C PROGRAM IN  
LOGISTICS

Minimizing a Project Cost with Bounds on the  
Expectation and Variance of the Delay  
Time.

(U)

DESCRIPTIVE NOTE: Scientific rept..

JUN 78 15P

Falk, James E. ;

REPT. NO. SERIAL-T-38:

CONTRACT: N00014-75-C-0729

UNCLASSIFIED REPORT

DESCRIPTORS: \*Scheduling, \*Nonlinear programming,  
Delay, Queueing theory, Algorithms, Sequences,  
Cost estimates, Theorems

IDENTIFIERS: MUN9347020

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(U)

A problem is discussed involving a project  
consisting of a number of tasks, each of which must  
be performed in a sequential manner. Any of the  
tasks is subject to a potential delay of known  
duration beyond its scheduled starting time. The  
task delay times may be decreased with the addition  
of funding. We seek to minimize the cost of  
completing the project, subject to bounds on both the  
expectation and variance of the total delay time.  
An algorithm is presented to solve the general  
problem. An example illustrates the method.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A057 992 5/1 14/1 14/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Rate Stabilization at Navy Industrial Fund  
Research, Development, Test and Evaluation  
Activities.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 78 126P Green, Donald Truman ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Budgets, \*Costs, \*Rates, \*Naval  
research laboratories, Accounting, Questionnaires,  
Theses, Cost analysis, Cost effectiveness,  
Stabilization, Research management, Test and  
evaluationIDENTIFIERS: Rate stabilization, Financial  
statements, Billing, Funding

(U)

(U)

The 13 Navy industrially funded RDT and E activities implemented rate stabilization in October 1976 under protest. With rate stabilization, DOD industrially funded activities bill their customers on the basis of stabilized billing rates that cannot be adjusted during the fiscal year as costs change. A basic objective is to allow customers to plan for cost escalation during the fiscal year as costs change. A basic objective is to allow customers to plan for cost escalation during a fiscal year by using rates established up to 15 months in advance of the fiscal year start. This thesis examines the operating results of rate stabilization at NIF RDT and E activities 18 months after implementation, in order to determine the degree of success in meeting rate stabilization objectives. Questionnaires and Financial Statements were used to gain research data. Conclusions are that the RDT and E activities and their customers have opinions that rate stabilization entails more disadvantages than advantages. Rate stabilization is not meeting the objective for which it was implemented since a majority of the RDT and E customers use the rates in budgeting. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A057 951 12/2 5/3

CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER

Dynamic Theory of Production Correspondences.  
Part III.

(U)

DESCRIPTIVE NOTE: Research rept..  
APR 78 63P Shephard, Ronald W. ; Faere,  
Rolf ;  
REPT. NO. JRC-78-4  
CONTRACT: N00014-76-C-0134. NSF- MCS77-16054

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Part I. AD-A057  
950.DESCRIPTORS: \*Production engineering, \*Dynamic  
programming, \*Cost analysis, Functional analysis,  
Systems analysis, Price index

(U)

IDENTIFIERS: Dynamic production functions, Duality  
theory, Cost benefits

(U)

Chapters 7 thru 9 of a monograph on a Dynamic Theory of Production Correspondences are presented. Dualities and Shadow Pricing, Index Functions for Production Theory and Indirect Dynamic Production Correspondences are discussed. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A057 810 5/1 15/4

ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND IL  
SYSTEMS ANALYSIS DIRECTORATESystems Analysis Directorate. Activities  
Summary, May 1977.

(U)

DESCRIPTIVE NOTE: Final note.

JUN 78 36P

REPT. NO. DRSAR/SA/N-78

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
 DESCRIPTORS: \*Army equipment, \*Cost analysis,  
 \*Army planning, \*Systems analysis, Costs, Cost  
 estimates, Predictions, Budgets, Protective masks,  
 Howitzers, Recoilless guns, Mortars, Ammunition,  
 Cost effectiveness, Production control

(U)

IDENTIFIERS: Engineering in Direct Support of  
 Production(EDSP), M-8 alarms, M-29A1  
 mortars, M-67 recoilless rifles, M-109A1  
 howitzers(155-mm), M-109A18 howitzers(155-  
 mm), M-109A2 howitzers(155-mm), M-17A1  
 protective masks, M-193 ammunition(5.56mm)

(U)

The purpose of this study was to compare the  
 Engineering in Direct Support of Production  
 (EDSP) costs from FY 74 through FY77 for  
 selected items and to provide a basis for comparing  
 and predicting future costs for budget planning. A  
 review of six items showed that the average percent  
 of the total program costs represented by the EDSP  
 charges ranged from 1.78% for the 5.56mm cartridge  
 to 10.42% for the M8 alarm series. Total  
 EDSP charges for these six items represented  
 2.10% of total program costs. The sample size was  
 too small and time period represented too short to  
 identify commonalities in these EDSP costs that  
 might be used for predicting. The recommendation  
 was made that a standard 3% for EDSP for each end  
 item be included in the budget. Significant  
 deviations would have to be fully justified on an  
 exception basis. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A057 444 5/4 12/1 17/9

MITRE CORP BEDFORD MASS

SEEK IGLOO Life Cycle Cost Model. Volume  
I. Cost Element Equations.

(U)

DESCRIPTIVE NOTE: Final rept..

JUL 78 61P Moynihan, R. A.; Stein, W.

M. ;

REPT. NO. MTR-3577-VOL-1

CONTRACT: F19628-78-C-0001

MONITOR: ESD TR-78-155-VOL-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Cost models,  
 \*Mathematical models, \*Mathematical analysis,  
 \*Search radar, Cost analysis, Equations,  
 Sensitivity, Test and evaluation, Air Force  
 training, Computerized simulation, Data bases,  
 Computer programs, FORTRAN, Logistics support,  
 Maintenance, Repair, Inventory

(U)

IDENTIFIERS: SEEK IGLOO Radar System, LPN-  
 MITRE-6260

(U)

An interactive Life Cycle Cost (LCC)  
 Mathematical model with a built-in Sensitivity  
 Analysis capability has been developed for use in  
 the evaluation of proposed designs for the Air  
 Force SEEK IGLOO Radar System. The SEEK  
 IGLOO LCC Model consists of 10 cost elements  
 which describe acquisition costs as well as operation  
 and support costs. This volume presents the  
 equations for these cost elements. Also included  
 is a full discussion of the assumptions made which  
 impact the development of these cost element  
 equations. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A057 343 14/1 15/3

CENTER FOR PLANNING AND RESEARCH INC PALO ALTO CALIF

Methods for Estimating Effectiveness and Cost  
of Civil Defense Program Elements. (U)

DESCRIPTIVE NOTE: Final rept.,  
FEB 78 127P Strobe, Walmer E.; Devaney,  
John F. :  
CONTRACT: DCPA01-77-C-0223

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Cost effectiveness,  
\*Civil Defense, Cost estimates, Mathematical  
models, Methodology, Casualties, Reduction,  
Vulnerability, Emergencies, Operational readiness,  
Preparation, Cost analysis, Computer programs  
IDENTIFIERS: Measures of effectiveness,  
Scenarios (U)

Two related methods of assessing the cost-  
effectiveness of civil defense program elements in  
reducing casualties are presented, one a hand  
calculation procedure and the other a computer  
routine adapted to the current DCPA casualty  
assessment program. The methods employ a defense  
scenario that accounts for changes in population  
vulnerability brought about by emergency operations  
and human behavior. Demonstration results are  
provided. Recommendations are made for further  
development. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A057 291 5/1 13/10

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Case Study: FFG-7 Class Ship. (U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 78 63P Easton, Frederick Bigelow :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, Frigates, Naval  
procurement, Learning curves, Shipbuilding, Guided  
missile ships, Case studies, Design to cost, Life  
cycle costs, Acquisition, Theses  
IDENTIFIERS: FFG 7 class vessels (U)

Estimating the cost of a major weapons system is an  
extremely complex process involving  
interrelationships between a number of organizations.  
This thesis is an examination of the events  
surrounding the cost estimating effort involved for  
the FFG class ship using a case study approach.  
The case discusses concepts involved in the FFG  
procurement which include the high-low mix, design to  
cost, life cycle costing, lead ship/follow-on ship  
procurement, fly before buy, independent cost  
estimating, and learning curve theory. A teaching  
note is provided to stimulate classroom discussion  
and analysis of the major areas covered in the case.  
Questions which may be used in classroom discussion  
or for assignment and the essentials of learning  
curve theory are also provided. (Author) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 996 17/2 20/12

RAYTHEON CO WALTHAM MASS RESEARCH DIV

Cost-Effective GaAs Read IMPATT Transmitters.

(U)

DESCRIPTIVE NOTE: Final rept. 29 Mar 76-31 Oct 77, MAY 78 786P Wallace, R. N. ;

REPT. NO. S-2294  
CONTRACT: F30602-76-C-0143  
PROJ: 4600  
TASK: 18  
MONITOR: RADC TR-78-81

UNCLASSIFIED REPORT

DESCRIPTORS: \*Impatt diodes, \*Microwave equipment, \*Data links, Gallium arsenides, Power amplifiers, Cost effectiveness, Strip transmission lines, Epitaxial growth, C band, Frequency modulation, Continuous waves  
IDENTIFIERS: Read diodes, Power combiners, TIM(Tapped-Inverted Microstrip), Tapped Inverted Microstrip, PE62702F, WURADC46001820

(U)

The objective of this program was to develop a low-cost 5-GHz 40-W FM CW transmitter, using GaAs Read IMPATT diodes as RF power-generating elements, suitable for data-link applications. The transmitter actually produced during the course of the program met most of the RF performance goals established initially, but the goals for size, weight, cost, and primary power consumption were not achieved. The transmitter system was divided into four major subassemblies; a VCO-driver, a multidiode output stage, a multichannel current regulator, and a DC-to-DC inverter. The VCO-driver produced a 3.3W CW output in the 4.97 - 5.03 GHz operating band, and was capable of more than 20 MHz peak-to-peak frequency deviation with modulating frequencies between 50 kHz and 12 MHz. The output stage combined four high-power single-diode modules, operating in the injection-locked oscillator mode, through a nonresonant multipoint hybrid. Compact coaxial cavity oscillator circuits were used for the diode modules.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 991 21/5

VOUGHT CORP DALLAS TEX

Ranjet Cost Estimating Handbook.

(U)

DESCRIPTIVE NOTE: Technical rept. Apr 76-Jan 77, MAY 78 326P Emmons, H. T. ; Norwood, D. L. ; Rasmusen, J. E. ; Reynolds, Homer E. ;

CONTRACT: F33615-76-C-2043  
PROJ: 3012  
TASK: 08  
MONITOR: AFAPL.CPIA TR-77-50-VOL-2-PUB-288

UNCLASSIFIED REPORT

Available from National Technical Information Service, Springfield, VA. 22161. PCS 100.00. MFS/100.00. No copies furnished by DDC.  
SUPPLEMENTARY NOTE: See also Rept. no. AFAPL-TR-77-50-VOL-1. AD-A054 856.

DESCRIPTORS: \*Ramjet engines, \*Handbooks, \*Cost analysis, \*Cost estimates, \*Production, Costs, Methodology, Parts, Fuels, Ducted rockets, Cost models, Solid fuels, Jet engine fuels, Liquids

(U)

IDENTIFIERS: Data sheets

(U)

This ramjet cost handbook is a result of work conducted under Air Force Contract F33615-76-C-2043 to generate cost data and to establish a cost methodology that will accurately predict the production costs of ramjet engines. The cost handbook contains a description of over one hundred and twenty-five different components which are defined as baseline components. The cost estimator selects from the handbook the appropriate components to fit his ramjet assembly, computes the cost from cost computation data sheets in the handbook, and totals all of the appropriate cost elements to arrive at the total engine cost. The methodology described in the cost handbook addresses many different ramjet types from simple podded arrangements of the liquid fuel ramjet to the more complex integral rocket/ramjet configurations including solid fuel ramjets and solid ducted rockets. It is applicable to a range of sizes from 6 in. diameter to 18 in. diameter and to production quantities up to 5000 engines.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 981 17/2 15/7 9/2

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint  
Tactical Communications. Volume III. Life  
Cycle Costing. Appendix F. Computer  
Models for LCC.

(U)

JUN 78 125P  
REPT. NO. TIO-ORT-032-78B-V3-AP-F

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
SUPPLEMENTARY NOTE: Supersedes report dated May 76,  
AD-A027 643. Appendix F to report dated Apr 78,  
AD-A055 147.

DESCRIPTORS: \*Tactical communications, \*Cost  
effectiveness, \*Life cycle costs, \*Computerized  
simulation, Computer programs, Communication  
equipment, Joint military activities, Management  
planning and control, Logistics support, Military  
requirements, Maintenance personnel, Digital  
computers, Estimates, FORTRAN  
IDENTIFIERS: HP 9821A computers

(U)

(U)

This appendix has been revised to update and  
correct some of the factors and cost estimating  
relationships (CER's) contained in the 1976  
issue. This revision describes and documents  
computer models for CER's and presents sample life  
cycle cost calculations using the models. It also  
includes a revised FORTRAN IV Program User's  
Guide incorporating military personnel and training  
costs as part of its costing methodology. The  
TRI-TAC Life Cycle Cost Element  
Structures from Volume III is used for  
formatting output costs. New features have also  
been added which will assist in formatting the  
estimates in a manner suitable for CAIG/DSARC  
presentations. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 936 17/7 14/1

ARINC RESEARCH CORP ANNAPOLIS MD

Avionics Cost Development for Civil  
Application of Global Positioning System.

(U)

DESCRIPTIVE NOTE: Interim rept..

JUL 78 32P Kowalski, S. H. ;

REPT. NO. 1326-01-4-1771

CONTRACT: DOT-FA76WA-3788

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Global positioning system, \*Avionics,  
\*Cost analysis, Systems engineering, Cost  
estimates, Civil aviation

(U)

This study of costs for avionics for civil use of  
the Global Positioning System (GPS),  
performed for the FAA Office of Systems  
Engineering Management (OSEM), was based on a  
uniform approach to cost estimating with the  
assistance of a pricing model. The system evaluated  
is the military-developed Z set with appropriate  
packaging modifications to meet the requirements of  
air carrier avionics standards and the less stringent  
environmental and packaging requirements for general  
aviation. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 907 17/2 14/1 15/7

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint  
Tactical Communications. Volume V. TRI-  
TAC Stylized Nodal Descriptions.

(U)

JUN 78 68P

REPT. NO. TIO-DRT-032-78-V5

## UNCLASSIFIED REPORT

Availability: Document partially illegible.  
SUPPLEMENTARY NOTE: See also Volume 3, AD-A055  
147.DESCRIPTORS: \*Tactical communications. \*Cost  
effectiveness. Telephone equipment. Trade off  
analyses. Cost models. Nodes. AN/TTC-42. Joint  
military activities. Communications networks.  
Communication switching centers. Military  
requirements. Defense planning  
IDENTIFIERS: AN/TTC-39

(U)

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The purpose of this volume is to identify a limited number of typical stylized nodal models that have been developed by the TRI-TAC Office to define a range of alternatives for various types of cost effectiveness studies. Eleven nodal types are identified; four contain AN/TCC-39 switches, four are based on the AN/TCC-42, and three address the SB-3865 unit level switchboard. Each node is described in terms of a block diagram which shows its major elements and how they will be interconnected. Specific details of each node are presented and additionally, variations of the nodal configurations can be readily developed by either (1) revising one or more of the ground rules which changes the equipment allocations; or (2) varying the major assemblies in a 'stylized' node. (Author)

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AD-A056 907

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 530 1/3 14/1 9/2 5/1  
14/4

DYNAMICS RESEARCH CORP WILMINGTON MASS

Digital Avionics Information System (DAIS).  
Volume I. Reliability and Maintainability  
Model.

(U)

DESCRIPTIVE NOTE: Final rept. May 75-Jul 77.

APR 78 62P Czuchry, Andrew J. ; Glasier,  
John M. ; Kistler, Robert H. ; Bristol, Marjorie  
A. ; Baran, H. Anthony ;

CONTRACT: F33615-75-C-5218

PRDJ: 2051

TASK: 00

MONITOR: AFHRL TR-78-2(1)

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Avionics. \*Life cycle costs. \*Cost  
models. Digital systems. Computerized simulation.  
Reliability. Maintainability. Experimental design.  
Mathematical models. Air Force procurement.  
Acquisition. Failure (Electronics). Manpower.  
Military requirements. Spare parts. Repair.  
Input output processing. Specifications  
IDENTIFIERS: PE63243F. WUAFHRL20510001

(U)

(U)

The reliability and maintainability (R and M) model described in this report represents an important portion of a larger effort called the Digital Avionics Information System (DAIS) Life Cycle Cost (LCC) Study. The R and M model is the first of three models that comprise a modeling system for use in LCC analysis of avionics systems. The total system will provide the Air Force with an enhanced in-house capability to incorporate LCC considerations early in the system acquisition process. As part of the overall modeling system, the R and M model provides estimates of failure rates, maintenance manpower requirements, support equipment requirements, and spares requirements which are used to generate estimates of system support costs. When operated in a stand-alone mode, the R and M model can be utilized to analyze the impact of various avionics design configurations on system support requirements. This report describes the R and M model in detail.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 191 5/9 14/1

LITTON SYSTEMS INC FORT BENNING GA MELLONICS SYSTEMS  
DEVELOPMENT DIV

A Consideration of Army Training Device  
Proficiency Assessment Capabilities.

(U)

DESCRIPTIVE NOTE: Technical rept.,

JUN 78 73P Shelnutt, Jack B. ; Smillie,

Robert J. ; Berco, James ;

CONTRACT: DAHC19-77-C-0011

PROJ: 2Q762722A765

MONITOR: ARI TR-78-A20

UNCLASSIFIED REPORT

DESCRIPTORS: \*Training devices, \*Cost effectiveness,  
\*Army training, Military requirements, State of  
the art, Army equipment, Operational readiness,  
Army aviation, Performance(Human),  
Proficiency, Simulators

(U)

IDENTIFIERS: Skill qualification tests.  
PE62722A, AS765

(U)

This report reviews the procedures and problems involved in the assessment of the use of training devices as a cost-effective alternative to the use of operational equipment for the evaluation of individual and collective proficiency in the U.S. Army. A review of the literature was conducted as well as an informal survey of personnel in other agencies who are involved in the use of training devices for proficiency assessment. This information was employed to: (a) review the use of training devices in proficiency assessment programs by agencies other than the Army; (b) to summarize aspects of proficiency test programs in the Army which are relevant to the present problem; and (c) to discuss issues which need to be considered in the assessment of the utility of using training devices for proficiency assessment. Recommendations were provided for future research planning. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 102 15/5

MITRE CORP BEDFORD MASS

AFSATCOM Life Cycle Cost Model.

(U)

JUN 78 150P James, J. H. ; Stein, W. M.

REPT. "D. MTR-3057

CONTRACT: F19628-77-C-0001

PROJ: 6340

MONITOR: ESD TR-78-144

UNCLASSIFIED REPORT

Availability: Document partially illegible.

DESCRIPTORS: \*Life cycle costs, \*Cost models,

\*Communication satellites, \*Logistics, Air

Force Mathematical models, Maintenance,

Repair

(U)

IDENTIFIERS: PE63302F

(U)

A Life Cycle Cost (LCC) mathematical model has been developed for the Air Force Satellite Communications System (AFSATCOM). The model (under FORTRAN program name SITELCC) has been used in various tradeoff analyses involving acquisition costs, operation and support costs, and system performance. The AFSATCOM LCC Model provides for three echelons of maintenance, for communications terminal configurations of black boxes which may differ from base to base, and for reliability data which is a function of operating environment. In addition to LCC, the model calculates terminal availability as a result of initial sparing levels computed. This report presents the detailed structure of the model. A description of the output reports with illustration from a sample model run is included. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 087 5/9 5/3 16/4.2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Unit Training Costs as a Part of Life  
Cycle Cost: A Methodology.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
JUN 78 100P Thompson, Grover Frank ;  
Allen, James Marion ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army training, \*Life cycle costs,  
\*Antitank weapons, Army budgets, Economic  
analysis, Performance(Human), Training devices,  
Army personnel, Theses, Company level  
organizations, Battalion level organizations,  
Military reserves, Cost effectiveness, Surface to  
surface missiles

(U)

IDENTIFIERS: TOW missiles

(U)

This paper examines the unit training costs,  
defined herein as company and battalion level  
training, associated with the introduction of a new  
weapon system into the Army inventory. The Army  
Life Cycle Cost Model does not address unit  
training costs, and accordingly there is a  
significant cost during the acquisition process that  
is not recognized. Recommendations are included  
for a means to arrive at life cycle cost figures that  
include unit training and also enable unit commanders  
to anticipate training requirements generated by new  
weapon systems. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A055 665 5/1 15/5 14/1

ARMY PROCUREMENT RESEARCH OFFICE FORT LEE VA

Evaluation of Purchase Cost Factors.

(U)

DESCRIPTIVE NOTE: Final rept..  
APR 78 47P Williams, William B. ; Zabel,  
Wayne V. ;  
REPT. NO. APRO-705

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army procurement, \*Cost analysis,  
Contract proposals, Cost estimates, Contract  
administration, Cost effectiveness, Contracts,  
Data bases, Regulations, Production, Inspection,  
Test and Evaluation, Military engineering,  
Military requirements, Standards

(U)

The conclusions of this study are that the  
obstacles to the inclusion of technical assistance  
costs in bid evaluation are formidable.  
Deficiencies in technical data packages (TDP's)  
the absence of data bases reflecting technical  
assistance costs, and the inability to state and  
measure assistance costs with precision militate  
against the application of technical assistance costs  
as an 'other factor.' On the other hand, it does  
appear that potentially high costs of technical  
support could be used as an element in determining  
the responsibility of a prospective contractor. In  
addition, it would seem that development and use of a  
process control specification would reduce the need  
for technical assistance costs on certain contracts.  
(Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A055 574 17/2.1 9/2

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

Software Acquisition Management Guidebook:  
Cost Estimation and Measurement.

(U)

DESCRIPTIVE NOTE: Technical rept.,

MAR 78 142P Finfer, Marsha ; Mish, Russell

REPT. NO. SDC-TM-5772/007/02

CONTRACT: F19628-76-C-0236

MONITOR: ESD TR-78-140

UNCLASSIFIED REPORT

DESCRIPTORS: \*Command and control systems,  
\*Communication and radio systems, \*Computer  
programs, Handbooks, Air Force operations,  
Specifications, Military requirements, Systems  
management, Air Force procurement, Life cycle  
costs, Quality assurance, On line systems,  
Configuration management, User needs, Real time,  
Closed loop systems, Display systems

(U)

The Software Cost Estimation and  
Measurement guidebook is designed to assist Air  
Force personnel who are responsible for estimating  
and controlling the costs of embedded software within  
command, control, and communications systems. It  
provides a basic understanding of the current  
methodologies used in the formation of Air Force  
and contractor software cost estimates. Insight is  
provided into some of the problems (and reasons for  
the problems) associated with software cost  
estimates made by both Government and industry.  
The guidebook discusses the role of parametric  
models used in cost estimation and reviews three  
experimental predictive models. It also discusses  
the process of monitoring software costs and  
schedules while providing guidance to relevant  
military regulations, specifications, standards, and  
supporting literature. Much of the information and  
guidance provided is applicable to smaller less  
complex systems, but in all cases, it should be  
tailored to the needs of individual projects.

(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A055 147 17/2.1 15/3 15/7

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint  
Tactical Communications. Volume III. Life  
Cycle Costing.

(U)

APR 78 106P

REPT. NO. TIO-ORT-032-78C-V3

UNCLASSIFIED REPORT

Availability: Document partially illegible.

SUPPLEMENTARY NOTE: Supersedes report dated Jun 76.

AD-A027 827.

DESCRIPTORS: \*Tactical communications, \*Cost  
effectiveness, \*Life cycle costs, Management  
planning and control, Military requirements, Repair,  
Maintenance, Estimates, Parts, Maintenance  
personnel, Training

(U)

This volume serves as TRI-TAC Office  
instructions and guidance to the services and  
agencies of their preparation, reporting, and  
tracking of life cycle costs estimates of TRI-TAC  
systems, subsystems, and equipments. A general  
methodology for estimating and analyzing TRI-TAC  
life cycle costs applicable to long range planning,  
equipment design analysis, and trade-off studies is  
presented. Formats for reporting and summarizing  
life cycle costs using the TRI-TAC structure and  
elements are provided. Appendices A, B, and  
C, included in the volume, define the detailed  
TRI-TAC cost element structure and identifies  
cost estimating relationships for operating and  
support cost elements. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A054 954 5/9 14/1

HUMAN RESOURCES RESEARCH ORGANIZATION ALEXANDRIA VA

Some Considerations in Analyzing Training  
Costs and Job Performance.

(U)

DESCRIPTIVE NOTE: Professional paper,  
FEB 78 3P Vineberg, Robert ; Joyner, John  
; Taylor, Elaine N. ;  
REPT. NO. HUMRRO-PP-5-78

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Department of  
Defense Cost Analysis Symposium, Colorado  
Springs, CO, 27-29 Oct 77.

DESCRIPTORS: \*Military training, \*Cost  
effectiveness, Job analysis, Work functions,  
Performance(Human), Management planning and  
control, Symposia

(U)

In summary, a task-level approach to cost-  
effectiveness analysis would use information from an  
analysis of training content, from occupational  
analysis, and from performance ratings. It would  
relate the costs of training and number of tasks in  
which training is provided to the number of tasks in  
which proficiency is attained at the completion of  
training. Thus, the effectiveness of a training  
program might be expressed by the number of tasks  
taught, times the quality of performance.  
Similarly, training costs could also be related to  
the actual frequency and quality of task performance  
in different types of jobs.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A054 834 1/3 5/3

RAND CORP SANTA MONICA CALIF

Estimated Costs of Extended Low-Rate  
Airframe Production.

(U)

DESCRIPTIVE NOTE: Interim rept.,  
MAR 78 69P Dreyfuss, David J. ; Large,  
Joseph P. ;  
REPT. NO. RAND/R-2243-AF  
CONTRACT: F49620-77-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Airframes, \*Cost estimates,  
Production rate, Aeronautical engineering,  
Aircraft industry, Inflation(Economics),  
Manufacturing, Aircraft, Tools, Materials,  
Value engineering, Industrial production,  
Specifications, Life cycle costs

(U)

Achieving a high rate of production as quickly as  
possible has traditionally been viewed as the most  
effective way of satisfying time-urgent inventory  
requirements while keeping production costs low.  
One common consequence has been the delivery of  
less than fully qualified production articles. This  
report discusses the cost of extending initial low-  
rate production while tests of early production  
articles continue. The relatively small resultant  
cost increases can potentially be offset by the  
delivery of more capable production items, lessened  
needs for postdelivery modification or retrofit, and  
lower total-life system costs. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A054 767 7/1 13/2

CIVIL ENGINEERING LAB (NAVY) PORT HUENEME CALIF

Operating Cost Evaluation of Sulfur Dioxide  
Removal Systems for Boiler Applications.

(U)

DESCRIPTIVE NOTE: Rept. for Jan-Sep 77,

APR 78 41P Slaminski, John M. ;

REPT. NO. CEL-TR-864

PROJ: F57571

TASK: ZF57571

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Scrubbers, \*Boilers, Commercial equipment, Removal, Sulfur oxides, Exhaust gases, Limestone, Activated carbon, Sulfuric acid, Cost analysis, Power measurement, Maintenance, Power levels, Air pollution control equipment, Naval shore facilities

(U)

IDENTIFIERS: Sulfur dioxide, Sodium sulfite, Sodium bisulfite, PE62765N, WU01015

(U)

Seven commercial processes for extracting sulfur dioxide from steam or steam-electric generating plants are analytically compared. The operation and economics of lime and limestone slurry scrubbing, dilute and concentrated double alkali, and dilute sulfuric acid processes with gypsum disposal products are contrasted with sodium sulfite/bisulfite and activated char sulfur recovery systems. Each process is critically analyzed to yield system flows and operating expenses (including equipment power consumption, product disposal costs or credits, reagent requirements and operating and maintenance costs). The laws for scaling these results to any given plant capacity and coal sulfur content are developed and parametrically graphed. This information is a valuable guide for the Navy or utility engineer to perform accurate system evaluations. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A054 503 13/10 5/3

ARINC RESEARCH CORP ANNAPOLIS MD

The Cost-Effectiveness of Standardization for  
Hull, Mechanical, and Electrical  
Equipment.

(U)

APR 78 59P

REPT. NO. 1821-11-1-1733

CONTRACT: N00140-77-D-0417

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Ship hulls, \*Ship auxiliary equipment, Standards, Cost effectiveness, Life cycle costs, Naval procurement, Military requirements, Contract administration, Shipbuilding, Investments, Research management, Work measurement, Naval operations

(U)

Standardization of hull, mechanical, and electrical (HM and E) equipments in the Navy shipbuilding program is assumed to be cost-effective; however, life-cycle-cost estimates to substantiate this assumption are not available. This report presents the results of a study to determine the value to the Navy, over the total life cycle of a ship, of standardizing HM and E equipments. This report presents an overview of the Navy ship standardization program, the development of a standardization life-cycle-cost model, standardization-related work tasks, and a life-cycle-cost comparison of the use of standard and nonstandard HM and E components and equipments in different complexity categories. The results provide examples of reduced life-cycle costs achieved when a standard component or equipment is utilized. (Author)

(U)

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AD-A054 503

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 963 5/1 15/5 14/1

MITRE CORP BEDFORD MASS

The Pentagon 'Four-Step'.

(U)

MAR 78 28P Waks, Norman :  
REPT. NO. MTP-190

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Contract administration, \*Military procurement, \*Cost overruns, Contract proposals, Contracts, Department of Defense, Trade off analyses, Design to cost, Cost estimates, Life cycle costs, Weapon systems, Acquisition, Selection

(U)

In the Secretary of Defense's Annual Report for FY'79 to the Congress, released on 2 February 1978, he indicated that the Department of Defense (DOD) was currently testing a new concept for contractor source selection on major programs called the 'four-step' process. He further indicated that a decision would be made in February on whether DOD would adopt this process. DOD's encouragement of the publication by the Wall Street Journal of a favorable article on the subject on 6 March would seem to indicate that this decision has been made and that DOD intends to go ahead and adopt the concept as a matter of policy. This paper questions both the desirability and the necessity for DOD to do so, since the objectives of 'four-step' can be accomplished in other ways. And these ways do not risk reducing program results, as 'four-step' does. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 953 15/5

WRIGHT STATE UNIV DAYTON OH DEPT OF ADMINISTRATIVE SCIENCE  
AND FINANCEOn the Benefit-to-Cost Ratio of Base-  
Level Stocking Decisions for Low Demand  
Items.

(U)

DESCRIPTIVE NOTE: Inter m rept..

APR 78 23P .2mm, W. Steven :Genet.  
Russell M. :Meitner, Thomas O :Miles, Ross  
E. :

REPT. NO. WP-76-3011-15

CONTRACT: AFOSR-76-3011

PRGJ: 2304

TASK: A5

MONITOR: AFOSR :R-75-0810

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Inventory analysis, \*Cost effectiveness, \*Stockpiles, Decision making, Aircraft, Aircraft equipment, Mathematical analysis, Computer applications

(U)

IDENTIFIERS: PE61102F, WUAFOSR2304A5

(U)

This paper explores a fundamental cause of aircraft non-availability. It shows that for current Air Force aircraft, a significant portion of the lack of supply availability is due to not stocking items at the base level. Basic research on methods to alleviate this problem in a cost-effective way is reported. It is shown, with specific, real world examples, how these methods can be applied to current inventory aircraft. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 937 9/2

ELECTRONIC SYSTEMS DIV HANSCOM AFB MASS

A Computerized Model for Estimating  
Software Life Cycle Costs (Model  
Concept). Volume 1.

(U)

APR 78 28P Bourdon, Gerard A. ; Duquette,  
Joseph A. ;  
REPT. NO. ESD-TR-77-253-VOL-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programs, \*Life cycle costs,  
Mathematical models, Cost estimates, Management  
planning and control, Cost models  
IDENTIFIERS: \*Computer software

(U)

(U)

This report is the first volume of a series of  
reports on the development of a computerized model  
for estimating software life cycle costs. This  
volume deals with the basic concepts of the model.  
The report defines the basic stages of the model,  
the methodologies employed, and the desired features  
of the model. The report contains enough  
information to allow operation of the model by manual  
methods. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 872 13/10 14/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The AGOR-21 Class Oceanographic Research  
Ships: An Acquisition Analysis.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
MAR 79 115P Van Maanen, Cury G. :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Research ships, \*Military procurement,  
\*Cost effectiveness, Strategy, Commercial  
equipment, Policies, Naval architecture,  
Reliability, Maintainability, Theses  
IDENTIFIERS: AGOR 21 class vessels

(U)

(U)

The use of commercial off the shelf products,  
commercial standards and business practices to meet  
Defense material needs is receiving increasing  
attention. Defense acquisition policy-makers  
believe that using commercial products and standards  
is one way to reduce acquisition costs while still  
meeting mission needs. This thesis is a history and  
analysis of a successful ship acquisition program  
which utilized commercial standards and practices.  
Two current ship acquisition programs using the  
same concept are briefly described. The intent is  
to illustrate the development of the acquisition  
concept and the project manager's strategy as well as  
describe the planning and execution of the program.  
Significant management problems were encountered  
due to use of commercial standards and practices.  
Emphasis is given to their solution. Contractor  
and ship operator evaluations of the program are  
provided. Several recommendations are made  
concerning use of commercial standards and practices  
for future acquisition programs. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 229 5/ 14/1 13/13 9/2

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLSupervision and Administration Cost/Rate  
Forecasting System. Volume I. User's  
Manual..

(U)

DESCRIPTIVE NOTE: Special rept..

MAR 78 197 O'Connor, Michael J. :

Lidral, Robert :

REPT. NO. CERL-SR-P-87

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Management planning and control. \*Cost  
models. Military engineering. Instruction manuals.  
Computer programs. Management information systems.  
Statistical data. Regression analysis. Data bases.  
Statistical analysis. Supervision. Supervisors.  
Administrative personnel. Mathematical prediction.  
Construction

(U)

This volume describes the use of the Supervision  
and Administration (S and A) Cost/Rate  
Forecasting System to maintain S and A data,  
to update the S and A forecasting model, and to  
forecast future S and A costs and rates. Volume  
II, the Programmer's Guide, contains software  
documentation. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 228 13/3 5/3

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLTrends in the Real Prices of Selected  
Construction Products and Materials. 1946-  
1976.

(U)

DESCRIPTIVE NOTE: Special rept..

MAR 78 56P Ramsson, R. :

REPT. NO. CERL-SR-P-84

PROJ: 4A762731AT41

TASK: 17

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Construction materials. \*Cost  
analysis. Lumber. Structural steel. Plywood.  
Concrete. Fittings. Brass. Clay. Paperboard.  
Heating plants. Asphalt. Gypsum.  
Inflation(Economics). Price index

(U)

IDENTIFIERS: Plumbing fixtures. PE62731A.  
WU005. AS101

(U)

This study measured trends in the relative prices  
of 13 construction goods and materials from 1946  
through 1976. The prices of three of these  
products—Douglas Fir lumber, structural steel  
products, and steel reinforcing bars—have increased  
substantially since World War II. The prices  
of plywood, building paper and board, heating  
equipment, asphalt, and gypsum products have declined  
during the post-war period. The prices of the  
remaining products—Southern Pine lumber,  
concrete products, millwork, plumbing fixtures and  
brass fittings, and structural clay products—have  
shown little or no change. The pattern of the real  
prices of these products in 1976 suggests that  
savings in construction materials can be obtained by  
substituting for those products whose prices have  
increased. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 180 1/3 14/1 15/5 9/2

ADMINISTRATIVE SCIENCES CORP ALEXANDRIA VA

Naval Aircraft Operating and Support Cost  
Model - FY76 Revision.

(U)

MAR 78 84P

REPT. NO. ASC-R-116

CONTRACT: N00014-77-C-0180

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval aircraft, \*Life cycle costs,  
\*Cost models, Logistics support, Parametric  
analysis, Computer programs, Cost estimates, Cost  
analysis, Throughput, Programming manuals,  
Aircraft maintenance, Replenishment, Repair

(U)

This report documents the revisions of a parametric model for estimating Naval aircraft operating and support costs developed by Administrative Sciences Corporation. The model provides an estimate of average annual and life cycle O and S costs based on aircraft physical characteristics and basic program parameters using parametric cost-estimating relationships, cost factors and throughputs, and has been used to support numerous cost analyses prepared for CAIG review as well as other special studies such as the Naval Escort Force Mix Study and the Sea Based Air Study. It is updated often in order to remain responsive to each particular analysis, to reflect the changing nature of Naval aviation, and simply to remain timely. This report reflects the status of the model after incorporation of all FY1976 data. The bulk of the report is concerned with providing a clear, concise and complete definition of each cost element and the way it is estimated by the model.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A052 822 5/3 12/1 5/1

WHARTON SCHOOL OF FINANCE AND COMMERCE PHILADELPHIA PA DEPT  
OF DECISION SCIENCESA Dynamic Theory of Contractual  
Incentives.

(U)

DESCRIPTIVE NOTE: Technical rept..

FEB 78 24P Blanning, Robert W. ;

Kleindorfer, Paul R. ;

REPT. NO. 78-01-03

CONTRACT: N0001 -77-C-0171

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Design to cost, \*Incentive contracts,  
Cost models, Mathematical models, Probability,  
Contract administration, Decision making, Weapon  
systems, Military procurement, Management planning  
and control

(U)

The purpose of this paper is to construct a simple model of the information, incentive, and decision aspects of financial incentive system and to offer insights into the problem of a high-level government unit that wishes to encourage lower-level units and private contractors to behave in consonance with its financial and non-financial objectives.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A052 661 5/3 9/3 15/5 5/9  
9/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

An Economic Analysis of Life Cycle  
Military Manpower Maintenance and Training  
Requirements in Avionics Minicomputer and  
Microcomputer Systems.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
MAR 78 68P Genovese, Dennis Harry ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Avionics,  
Maintenance, Military training, Microcomputers,  
Minicomputers, Naval training

(U)

IDENTIFIERS: Federated computer system,  
Consolidated computer system

(U)

The dramatic advances within the electronics industry over the last few decades have brought about several equally effective computer design alternatives for use in military avionics systems. This report is an attempt to examine the maintenance personnel and training Life Cycle Costs associated with three of these alternatives: (1) Consolidated Mission Computer, (2) Federated Homogeneous Computer System, and (3) Federated Heterogeneous Computer System. The computations indicate that the Federated Homogeneous System is the most cost effective alternative. This report is intended as an input to the research being conducted by LCDR James Buttinger and Associate Professor Uno Kodres for the Naval Weapons Center, China Lake, titled A Study of Alternatives for VSTOL Computer Systems. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A052 400 14/1

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA

Cost Effective Analysis.

(U)

DESCRIPTIVE NOTE: Report bibliography Jul 73-Apr 77.  
APR 78 441P  
REPT. NO. DDC/BIB-78/01

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes Rept. no. DDC-TAS-75-8, AD-A010 400. See also report dated Mar 72, AD-738 800 and report dated Nov 73, AD-771 705.

DESCRIPTORS: \*Cost effectiveness, \*Costs,  
\*Bibliographies, Cost estimates, Cost analysis,  
Economics, Management planning and control,  
Decision making, Logistics planning, Government  
procurement, Trade off analyses

(U)

This bibliography contains unclassified-unlimited citations on Cost Effectiveness Analysis. These citations emphasize program evaluations, management techniques, research and development decision making, management problems, tradeoffs, related cost analysis and methodology, and systems value engineering. The four computer-generated indexes provided are Corporate Author-Monitoring Agency, Subject, Title and Personal Author. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A051 737 20/1 14/1 13/13 13/3

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Construction-Site Noise Control Cost-Benefit Estimating Procedures.

(U)

DESCRIPTIVE NOTE: Interim rept.,  
JAN 78 35P Kessler, F. M. ; Schomer, P.  
D. ; Charaud, R. C. ; Rosendahl, R. ;  
REPT. NO. CERL-IR-N-36  
PROJ: 4A762720A896  
TASK: 03

UNCLASSIFIED REPORT

DESCRIPTORS: \*Noise reduction, \*Cost estimates,  
\*Construction equipment, Sound pressure, Barriers,  
Specifications, Sites, Backfills, Trenching,  
Earth handling equipment, Substitutes,  
Foundations (Structures), Modification,  
Concrete, Plywood  
IDENTIFIERS: PE62720A, AS896

(U)

(U)

This report aids the U.S. Army Corps of Engineers construction cost estimator in determining the level of noise generated at construction sites, in comparing this level with Corps of Engineers criteria, and in estimating costs to a contractor of reducing the noise. A companion report, Construction-Site Noise Control-Cost-Benefit Estimation Technical Background, Technical Report N-37 (U.S. Army Construction Engineering Research Laboratory (CERL), January 1978), contains the rationale and data supporting this report.  
(Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A050 830 5/9 5/10 5/3

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN DIEGO CALIF

A Performance-Contingent Reward System That Uses Economic Incentives; Preliminary Cost-Effectiveness Analysis.

(U)

DESCRIPTIVE NOTE: Interim rept. Jul 76-Apr 77.  
FEB 78 59P Bretton, Gene E. ; Dockstader, Steven L. ; Nebeker, Delbert M. ; Shumate, E. Chandler ;  
REPT. NO. NPPDC-TR-78-13  
PROJ: F55521  
TASK: ZF55521018

UNCLASSIFIED REPORT

DESCRIPTORS: \*Government employees, \*Motivation, Salaries, Awards, Performance (Human), Optimization, Productivity, Forecasting, Cost effectiveness, Efficiency, Quality, Operators (Personnel), Office personnel, Keyboards, Data transmission systems, Management information systems  
IDENTIFIERS: Bonuses, PRCS (Performance Contingent Reward System), Performance Contingent Reward System, Incentive wages, PE62763N, WUZF555210180302

(U)

(U)

The cost-effectiveness, cost-savings projections, and related issues of a Performance-Contingent Reward System (PCRS) that uses economic incentives were evaluated. The PCRS was tested on federal civil service data transcribers in the Management Information System Department of the Long Beach Naval Shipyard (LBNSY). Evaluation of the PCRS was conducted primarily from the following perspectives: (1) The cost-effectiveness of the proposed PCRS relative to former production conditions at the test site; (2) Issues involving the generalizability of the test-site results to other Navy activities with substantial concentrations of data transcribers; and (3) Projections of PCRS-induced cost savings in terms of specified outyears, levels of aggregation of data transcribers, and levels of generalizability of test-site results.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A050 813 13/3 20/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Construction-Site Noise Control Cost-Benefit Estimation Technical Background. (U)

DESCRIPTIVE NOTE: Final rept.,

JAN 78 105P Kessler, Fred M. ; Schomer, Paul D. ; Chanaud, Robert C. ; Rosendahl, Eugene ;

REPT. NO. CERL-TR-N-37

UNCLASSIFIED REPORT

Availability: Microfiche copies only.

DESCRIPTORS: \*Construction equipment, \*Noise reduction, Sites, Machinery noise, Noise pollution, Control systems, Cost effectiveness, Cost estimates, Technology transfer, Mathematical models, Computerized simulation, Data acquisition, Scheduling (U)

Presented are methods of estimating noise level at a construction site, methods of noise reduction and control at a construction site, and the associated costs for this reduction with the emphasis on equipment noise control. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A050 588 16/4.2 5/1 15/5

ARINC RESEARCH CORP ANNAPOLIS MD

LCC/DTC Tasks Conducted for MX Weapon System Program. (U)

DESCRIPTIVE NOTE: Summary rept. Oct 76-Jan 78.

JAN 78 16P Buchanan, H. N. ; Nelson, R. R. ; Schaefer, J. N. ; Sweet, D. E. ;

REPT. NO. 1953-03-2-1692

CONTRACT: F04606-76-A-0087

UNCLASSIFIED REPORT

DESCRIPTORS: \*Surface to surface missiles, \*Strategic weapons, \*Life cycle costs, \*Design to cost, Cost models, Computer programs, Logistics support, Guided missile silos, Trenching, Underground structures, Hardened structures, Logistics management, Logistics planning, Algorithms, Data bases (U)

IDENTIFIERS: MX missiles (U)

Tasks conducted by ARINC Research Corporation related to life cycle cost/design-to-cost support of the MX weapon System are described. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A050 224 9/2

WASHINGTON UNIV SEATTLE DEPT OF CHEMISTRY

A Low-Cost, General Purpose Data Acquisition and Control System for the PDP-11 MiniComputer.

(U)

DESCRIPTIVE NOTE: Technical rept.,

FEB 78 23P Danielson, J. D. S.; Brown, Steven D.; Appellof, Carl J.; Kowalski, B. R.

REPT. NO. TR-11

CONTRACT: N00014-75-C-0536

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Minicomputers, \*Data acquisition, \*Control systems, Man computer interface, Computer programs, Fortran, Input output processing, Low costs, Registers (Circuits), Multiplexing, Analog to digital converters

(U)

IDENTIFIERS: PDP-11 computers, Computer program transferability, WUNR051565

(U)

A general-purpose interface for the PDP-11 family of minicomputers is described. The interface, oriented towards laboratory data-acquisition and experimental control applications, can be built in a relatively short time with low materials costs. A general purpose, FORTRAN-compatible software package capable of driving the interface is also discussed. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A049 976 5/2 14/1

ARMY AVIATION RESEARCH AND DEVELOPMENT COMMAND ST LOUIS MO

A Computerized Log for Systems and Cost Analysis Division Cost Estimate Control Data Center (CECDC) Validation Activity.

(U)

DESCRIPTIVE NOTE: Final rept.,

JAN 78 24P Ragan, Joanne A. :  
REPT. NO. USAAVRADCOM-TR-78-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Information processing, \*Cost analysis, \*Control, Computer applications, Cost estimates, Validation, Weapon systems, Military procurement, Systems approach, Computer programming, Flow charting

(U)

Responsibility for validating and/or reviewing documents containing cost estimates has been assigned to the CECDC function of DRDAV-BC. In order to utilize the speed and accuracy available with automatic data processing, a computer program has been developed to process the appropriate information from these documents, to aid in preparation of the necessary reports and to provide a historical log of the documents which have been processed. The logging procedure includes portions accomplished manually as well as the portion produced by the computer. After a document has been validated (or rejected) by a CECDC analyst, specific information is logged before the document is returned to the proponent. Periodically, these records are key punched onto IBM punch cards, which are then processed by the IBM 360/65 computer using the specially designed Computerized Log Program. Within the computer, data records are sorted by aircraft system, and are then printed out in group arrangement according to type of validation, aircraft type, and month.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A049 940 17/2 17/2.1 22/2

MATHEMATICA INC PRINCETON N J MATHTECH DIV

A Cost Effectiveness Analysis of the Naval  
Modular Automated Communications System  
(NAVMACS).

(U)

DESCRIPTIVE NOTE: Final rept. 1 May-30 Sep 77.  
JAN 78 252P Agnew, Carson E.; Lanen,  
William N.;  
CONTRACT: N00014-77-C-0049  
MONITOR: ONR 7162-FR1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Communication terminals, Radio  
broadcasting, Modular construction, Message  
processing, Automation, Shipboard, Communications  
networks, High frequency, Teletype systems,  
Ultrahigh frequency, Printers(Data processing),  
Communication satellites, Cost effectiveness  
IDENTIFIERS: Emergency communications, Satellite  
communications, WUNRQ23004

(U)

(U)

This report presents an analysis of the Navy's  
Afloat Message Communications System, as it  
will be affected by the Naval Modular Automated  
Communications System (NAVMACS) Program.  
Our objective in this analysis has been to assess  
the impact that alternative decisions concerning the  
NAVMACS program and its implementation will have on  
communications costs and effectiveness.  
(Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A049 847 1/3 15/5 5/3 9/2

ARMY TROOP SUPPORT AND AVIATION MATERIEL READINESS COMMAND  
ST LOUIS MO

Historical Inflation Program (A Computerized  
Program Generating Historical Inflation  
Indices for the Procurement of Army  
Aircraft).

(U)

DESCRIPTIVE NOTE: Final rept..  
JAN 78 68P Gille, Warren H., Jr.  
REPT. NO. TSARCCW-TR-77-4

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: \*Army aircraft, \*Army procurement,  
\*Inflation(Economics), \*Computer programs,  
\*Cost analysis, Cost estimates, Indexes,  
Airframes, Aircraft engines, Avionics, Models,  
Methodology, Computerized simulation, Time series  
analysis, Computations, History, Economics  
IDENTIFIERS: Historical Inflation Computer  
Program

(U)

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This report extends and revises Technical  
Report 76-18 which presents and describes the  
Historical Inflation Program, a computerized  
program generating historical inflation indices for  
the procurement of Army aircraft. The program can  
be updated monthly, is easily revised for changes in  
Bureau of Labor Statistics methods, and capable  
of handling data for all fiscal year formats.  
Output is expressed as monthly, quarterly, calendar  
year inflation indices (in Calendar Year 1967  
base) and inflation factors (in any Fiscal  
Year base). This report contains updated tables  
of inflation factors, expressed in a FY 77 base.  
These indices and factors provide a means of  
adjusting historical cost data for the procurement of  
Army aircraft to constant year dollars.  
Additional features include: computations for the  
Derivation of Revised Weighting Factors,  
detailed indices enabling the adjustment of  
historical Labor and Material cost separately, a  
discussion of aggregate weighting factors for Labor  
and Materials, including trends from sensitivity  
analysis, and a more complete explanation, and  
additional documentation, aimed at making the report  
more useful to a larger cross section of the DOD

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AD-A049 847

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A048 782 9/2 5/1 5/2

GEORGIA INST OF TECH ATLANTA COLL OF INDUSTRIAL  
MANAGEMENTThe Pricing of Computer Services: A  
Bibliography.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JAN 78 68P Hamilton, Kenneth L. ;  
REPT. NO. GIT-MS-78-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer applications, \*Data  
processing, \*Costs, \*Bibliographies, Economics,  
Computers, Accounting, Indexes, Management  
planning and control, Facilities, Management  
information systems, Allocations, Budgets (U)This bibliography consists of references to the  
literature on pricing of computer services. A table  
of contents provides indexing of the bibliography on  
the bases of authors, editors, titles, etc., with  
cross references to the original entry. The  
bibliography will be revised at a later date to  
include classification according to content along  
with additional critical annotations and abstracts.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 761 5/9 5/3

AIR FORCE HUMAN RESOURCES LAB BROOKS AFB TEX

USAF Military Personnel Costing:  
Problems and Approaches.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 73-Dec 76.  
AUG 77 54P Baran, H. Anthony ;  
REPT. NO. AFHRL-TR-77-39  
PROJ: 1124  
TASK: 03

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force personnel, \*Cost analysis,  
Cost estimates, Accounting, Human resources,  
Guides, Allocations, Life cycle costs, User  
needs, Missions, Standardization, Job training,  
Fringe benefits, Retirement(Personnel),  
Medical services, Billets(Personnel) (U)  
IDENTIFIERS: PE62703F, WUAFHRL11240306 (U)This report attempts to identify the most pressing  
Air Force military personnel costing problems and  
to specify the prerequisite needs of Air Force  
cost analysts in order to solve them. A survey was  
made to identify costing approaches and techniques to  
satisfy the needs. These were then examined to  
assess their utility in developing standardized  
costing techniques and standard cost parameters for  
Air Force military personnel. The examination  
revealed ways in which planned application restricts  
the choice of methods, and the existence of  
widespread disagreements concerning basic definitions  
and objectives. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 674 9/2 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO

A Quantitative Analysis of Estimating  
Accuracy in Software Development.

(U)

DESCRIPTIVE NOTE: Doctoral thesis.

AUG 76 191P Gehring, Philip Francis, Jr;  
REPT. NO. AFIT-CI-77-28

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer program verification, \*Cost estimates, \*Experimental design, Assessment, Accuracy, Estimates, Models, Management engineering, Cost analysis, Automation, Data processing, Requirements, Literature surveys, Theses, Standardization

IDENTIFIERS: \*Project management

(U)  
(U)

This research quantitatively examines the estimating accuracy of over 5000 standardized resource consuming activities from 39 software development projects of various size. The activity data pertaining to planned hour estimates and actual expenditures were collected by an automated project management system (PARMIS) as the data were generated. The dissertation hypothesizes that specific activities can be isolated which consistently have a greater influence on whether a software development project will be successful in terms of cost and schedule estimates. The arithmetic and percent differences between estimated and observed hour expenditures are the elementary variables used to investigate estimating accuracy. Various summarizing and statistical techniques are employed to reveal the information inherent in the data, and to identify, if possible, a correlation between the selected activities and the final difference between the total hours estimates and expended for the project. The findings from the data source used clearly support the hypothesis. However, no correlation was found between the activities which have the most influence on estimating accuracy in a software development project and other criteria such as the total project difference.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 667 21/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSDevelopment of Cost Estimating Relationships  
for Aircraft Jet Core-Engine Overhaul  
Costs.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 77 160P Breglio, Robert A., Jr.;  
Wright, Richard F.;  
REPT. NO. AFIT-LSSR-31-77B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Jet engines, \*Cost estimates, \*Life cycle costs, \*Aircraft maintenance, Regression analysis, Mathematical models, Operation, Parameters, Costs, Maintenance, Turbojet engines, Turbofan engines, Aircraft engines, Theses

IDENTIFIERS: Core engines

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(U)

Cost estimation is a wide open area within the Department of Defense and accurate cost estimating models are a valuable tool in the life cycle costing of a weapon system. This research effort utilized multiple linear regression analysis to develop parametric cost models or cost estimating relationships (CERs) for jet engine depot overhaul costs. Both engine operating parameters, e.g., turbine inlet temperature, RPM, etc., and engine physical characteristics, e.g., length, weight etc., were considered as probable cost drivers. Extensive analysis was performed to determine the reliability of the data base. The major finding of this study was that models can be developed with acceptable explanatory power, with respect to variation in the data base, using data of questionable reliability. Thus, a model developed should not be accepted on the basis of explanatory power alone but should be tested further to determine its utility as a cost estimator. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 662 15/5 5/9 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSA Cost Analysis of Graduate Education in  
Logistics Management.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 77 136P Haynes, Ralph R.; Williamson,

Dennis A.;

REPT. NO. AFIT-LSSR-16-77B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Logistics management,  
\*Courses(Education), \*Cost analysis,  
Graduates, Military training, Air Force  
personnel, Costs, Education, Universities,  
Surveys, Requirements, Research management,  
Comparison, Theses

(U)

The purpose of this thesis was to compare the full cost to the Air Force for providing an officer with a Master of Science degree in Logistics Management from AFIT with the full cost of a similar degree from a civilian institution. Graduate logistics programs of twelve universities were evaluated to determine if their graduate degree requirements were similar to AFIT resident program requirements; the requirements of four universities were found to be similar. Elements of cost necessary to make a comparative cost analysis were identified and defined. The elements were subdivided into three categories to facilitate cost comparison and to more readily identify the areas of greatest cost. The three categories were direct and indirect costs of education and pay and allowances. The average monetary value of each element of cost was determined. Then an analysis of the total cost of each program was performed. The authors concluded that pay and allowances are the most sensitive element of cost and that the AFIT resident program was the least expensive.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 640 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

Aircraft Maintenance Cost Elements.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 77 228P McCarty, Deryl S.; Moore,

Ronald L.;

REPT. NO. AFIT-LSSR-17-77B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft maintenance, \*Cost analysis,  
\*Maintenance management, Management planning and  
control, Costs, Cost effectiveness, Military  
requirements, Cost models, Scheduling, Maintenance  
personnel, Accounting, Accountability, Theses

(U)

IDENTIFIERS: Cost accounting

(U)

The Department of Defense Management by Objective 9-2 required that all services develop a non-duplicative, inexpensive aircraft maintenance cost accounting system that would provide a data base for determining downstream aircraft life cycle costs. To date, no USAF accounting system has fulfilled these requirements. To develop a comprehensive accounting system that does meet MBO criteria requires that a new accounting system be developed based on an extensive three-phase research program. The three phases include: (1) to identify the maintenance cost elements in use, (2) to identify which of these elements are needed by Air Force managers, and (3) to determine which of these needed elements provide the most information at the least cost. This study starts this three-phase research by determining what maintenance costs elements are currently costed by civilian and military maintenance organizations. This was accomplished through a review of civilian and military aircraft maintenance cost accounting publications using the technique of semantic content analysis. The results of this analysis provided a 'core list' of 'in-use' aircraft maintenance cost elements and recording techniques. From this core list, the next research phase--identification of AF cost element needs--can be inaugurated.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 634 15/5 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

An Analytical View of Advance Incentivized Overhead Agreements in the Defense Industry.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
 SEP 77 179P Lynch, Patrick J. ; Pace,  
 John M. ;  
 REPT. NO. AFIT-LSSR-14-77B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force procurement, \*Indirect costs, \*Contract administration, Agreements, Cost analysis, Cost overruns, Profits, Management planning and control, Incentive contracts, Department of Defense, Monitoring, Contracts, Vendors, Theses  
 IDENTIFIERS: \*Overhead costs

(U)  
(U)

Overhead costs constitute a substantial portion of the DOD dollars spent in the procurement of defense systems. Therefore, overhead control has become an area of special concern to government contract managers. Previous attempts to negotiate an advance agreement on total overhead costs have been unsuccessful due to a number of factors. This study examined those factors and another step in the evolution of advance agreement theory. This step involves the application of a sharing arrangement to underruns or overruns of the advance agreement target expenditure levels. In this study the authors outline the strengths and weaknesses of the current government overhead monitoring process, provide a basic structure for an advance incentivized overhead agreement and present the advantages and shortcomings of using such an agreement. The authors conclude that utilization of an advance incentivized overhead agreement will improve the current overhead monitoring process by establishing goal congruency between contractor profit and government cost goals and by facilitating the communication of government cost objectives to defense contractors.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 391 5/9 14/1 5/1

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND TECHNOLOGY DIV

The RDT and E Program of the DoD on Training, FY 1977.

(U)

DESCRIPTIVE NOTE: Final rept. Apr 76-Jul 77.  
 JUL 77 85P Orlansky, Jesse ;  
 REPT. NO. P-1270  
 CONTRACT: DAH015-73-C-0200  
 MONITOR: IDA/HQ.SBIE 77-19304-AD-E500 007

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military training, \*Research management, \*Cost effectiveness, Teaching methods, Assessment, Cost analysis, Resource management, Computer aided instruction, Flight simulation, Military exercises, War games, Training devices, Flight simulators, Performance(Human), Test and evaluation, Allocations  
 IDENTIFIERS: \*Training management, Research and development

(U)

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This paper identifies the RDT and E program of the DoD on military training for FY 1977. An analysis of work units shows that the areas of training which receive major attention are the development and evaluation of flight simulators (all services, with the Air Force expending most funds), engagement simulation of battlefield activities (Army) and computer-assisted instruction (Navy, Air Force, and DARPA). Lesser efforts are expended on performance measurement in training and on cost-effectiveness studies of training. This analysis is part of an overall study to evaluate methods and data useful for determining the cost and effectiveness of alternative ways of training military personnel. Particular attention is directed in the study to the use of flight simulators, training devices, computer-assisted instruction and methods of training. R and D activities are identified in this paper to define the nature and scope of current research efforts directed to major areas of training.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A047 378 5/1 5/3

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA COST ANALYSIS GROUP

Contractor Initiatives for Reliability, Maintainability, and Cost Improvement. (U)

DESCRIPTIVE NOTE: Final rept..

SEP 77 41P Weimer, C. David ;

REPT. NO. P-1291

MONITOR: IDA/HQ, SBI 77-19708, AD-E500 010

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Management engineering. \*Costs. Production, Life cycles, Reliability, Maintainability, Electronic equipment, Data acquisition, Contract administration, Design to cost, Life cycle costs, Reliability(Electronics), Military procurement, Policies, Regulations, Guarantees, Industrial production, Performance (U)

IDENTIFIERS: Contractors (U)

This paper presents a synthesis of major findings and conclusions derived from four years of research in electronics subsystem acquisition. Department of Defense policy statements for achieving improved reliability, maintainability, and cost are reviewed. The application and implementation of these policies are examined and the management response of system and subsystem contractors is described in areas of operating policies and procedures, project organization, cost management and control, and development program planning. The contractor experiences during their engineering development programs are subsequently evaluated in terms of operating problems or policy barriers. In total, the experiences of 42 contractors responding in 25 separate programs are examined and analyzed. Based upon their past experiences and management behavior, the appropriate response to successfully embrace future policy initiatives is postulated. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A047 356 9/2 10/3 4/2 14/1

JET PROPULSION LAB PASADENA CALIF

Computer Program for Design and Performance Analysis of Navigation-Aid Power Systems Program Documentation, Volume II - User's Manual. (U)

DESCRIPTIVE NOTE: Final rept..

JUL 77 103P Gritz, G. ; Weimer, H. ;

REPT. NO. JPL-5043-27-VOL-2-change-1

MONITOR: USCG, CGR/DC D-11-77-VOL-2: 8/76-VOL-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also volume 3. AD-A047 542.

DESCRIPTORS: \*Computer program documentation. \*Solar cells. \*Mathematical analysis. \*Cost effectiveness. \*Power supplies. Programming manuals. Input output processing. Solar radiation. Geographical distribution. Variations. Meteorological data. Cloud cover. Feasibility studies. Electric Batteries. Navigational aids (U)

A computer program has been developed for designing and analyzing the performance of solar array/battery power systems for the U. S. Coast Guard Navigational Aids. This program is called the Design Synthesis/Performance Analysis (DSPA) Computer Program. The basic function of the Design Synthesis portion of the DSPA program is to evaluate functional and economic criteria to provide specifications for viable solar array/battery power systems. The basic function of the Performance Analysis portion of the DSPA program is to simulate the operation of solar array/battery power systems under specific loads and environmental conditions. This document provides all the information necessary to access the DSPA programs, to input required data and to generate appropriate Design Synthesis or Performance Analysis Output. (U)

AD-A047 356

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 282 14/1 1/3 14/4

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

A Methodology for Estimating the Economic Benefits of an Aircraft Engine Warranty. (U)

DESCRIPTIVE NOTE: Mast, J. 's thesis.  
SEP 77 135P Dooley, Martin P. ; Kells, Richard E. ;  
REPT. NO. AFIT-LSSR-10-77B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft engines. \*Guarantees. \*Cost benefits. Life cycle costs. Savings. Cost estimates. Reliability. Components. Mathematical models. Computer programs. Theses  
IDENTIFIERS: Warranties (U)

Aircraft engine warranties are used extensively in the commercial airlines industry. If the Department of Defense hopes to use warranties as a method of reducing engine life cycle costs, the costs and benefits of each warranty must be carefully analyzed. The methodology developed in this study provides framework to assist analysts in estimating the economic benefits of an engine warranty. A test application of the methodology details the benefits of a hypothetical DDD engine warranty, and includes a sensitivity analysis of the key variables. The study concludes that the basic method can be used to estimate the economic benefits of a wide range of engine and equipment warranties. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 198 5/9 14/1

GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS DIV

Development of Methods for Analysis of the Cost of Enlisted Attrition. (U)

DESCRIPTIVE NOTE: Final rept. Jun 76-May 77.  
SEP 77 294P Huck, Daniel F. ; Midlam, Kenneth E. ; Puncell, Agnes ; Sica, Geraldine ; Bocast, Alex ;  
REPT. NO. G10-CR-167  
CONTRACT: N0014-76-C-0939

UNCLASSIFIED REPORT

DESCRIPTORS: \*Enlisted personnel. \*Attrition. \*Costs. Cost effectiveness. Mathematical models. Performance (human). Manpower utilization. Motivation. Education. Graduates. Cost benefits. Learning curves. Aptitudes. Naval personnel. Vocational guidance. volunteers. Recruits. All volunteer  
IDENTIFIERS: Navy all volunteer force (U)

The objectives of this study were to (1) develop cost-effectiveness measures for first-term enlisted personnel integrating attrition, cost and value parameters; (2) compile as complete a data base on these parameters as could be accomplished with the Services' cooperation (but without creating significant new data systems). Concentrating on those qualitative or identifying factors that can be known about an individual at the time of enlistment; (3) develop a user-oriented system of computer programs which will relate the data to the models in an easy-to-use, efficient, and flexible way. Data bases for attrition data for both the Navy and Marine Corps have been compiled. The cost data included here are felt to encompass all significant costs associated with first-term enlistees. The utility functions developed in this study are much more comprehensive than was originally planned because of a realization of the great impact the utility function assumptions have on the cost-effectiveness measures.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 181 1/3 14/1

RAND CORP SANTA MONICA CALIF

A Critique of Aircraft Airframe Cost Models.

(U)

DESCRIPTIVE NOTE: Interim rept..

SEP 77 61P Large, J. P. ; Gillespie, K.

M. S. ;

REPT. NO. RAND/R-2194-AF

CONTRACT: F49620-77-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Companion report to rept. no. RAND/R-2196-AF.

DESCRIPTORS: \*Airframes. \*Cost models. Cost analysis. Aircraft. Criteria. Parametric analysis. Military planning. Quality control. Experimental design. Aeronautical engineering. Production. Cost estimates. Reliability

IDENTIFIERS: Program management

(U)

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This document examines a sample of seven aircraft airframe cost models. The intent is to determine whether the model output is reasonable over a broad range of inputs, what limitations should be noted, and where one model might be preferable to the others. The critique shows that all the models have some deficiencies and all should be used with caution. The more recent models appear to be better than the older ones, which may be taken as a sign of progress, but it is plain that more progress is needed. Some of the lessons learned in this review may be helpful in pointing out how the next generation of aircraft airframe cost models could be improved.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 167 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Procurement Contracting Officer's Guide to Cost Accounting Standards.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 77 140P Soderberg, Paul G. ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Costs. \*Accounting. \*Government procurement. \*Standards. Contract administration. Government employees. Specialists. Requirements. Job analysis. History. Cost overruns. Management planning and control. Accountability. Procurement. Theses

(U)

IDENTIFIERS: \*Cost accounting standards. Public law 91-379

(U)

This thesis is an exploration of the procurement contracting officer's role in implementing and administering Cost Accounting Standards. It introduces the procurement officer to the subject by discussing the history and development of Cost Accounting Standards, the functions of the Cost Accounting Standards Board, and the methodology utilized by the Department of Defense in implementing Public Law 91-379. The main objective is to define the tasks that Cost Accounting Standards have placed on the procurement officer. By understanding these tasks the procurement officer will better function in the procurement environment. A current literature search was conducted to obtain the information contained herein. The reader will not be confronted with technical accounting terms and will need only a basic knowledge of Government procurement to understand the subject matter. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 126 15/7 15/5 5/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

An Analysis of Major Training Area  
Operations in V Corps. US Army Europe.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 77 149P Moore, Michael John ;  
Teesdale, Thomas Joseph .

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military training. \*Military  
operations. \*Scheduling. \*Logistics support. \*Cost  
analysis. Computer applications. Theater level  
operations. West Germany. Military forces (United  
States). Military planning. Military budgets.  
Military transportation. Computer programs.  
Programming manuals. Theses

(U)

This thesis presents the results of applying operations research to V Corps' Major Training Area (MTA) operations in the Federal Republic of Germany. The study examines three aspects of these MTA operations: the movement of tracked vehicles to training sites; the prediction and allocation of supply costs associated with MTAs and the scheduling of MTA operations. The thesis concentrates on developing methodologies which are immediately implementable by V Corps and which will assist the Corps commander and his staff in their efforts to solve problems in these three areas. The thesis develops a computer assisted scheduling system with a user's guide, and sets forth MTA movement costs and aspects of MTA supply costs for consideration by the commander and his staff in the decision making process. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A047 103 12/2 3/3

CORNELL UNIV ITHACA N Y SCHOOL OF OPERATIONS RESEARCH AND  
INDUSTRIAL ENGINEERINGInternal Telephone Billing Rates - A  
Novel Application of Non-Atomic Game  
Theory.

(U)

DESCRIPTIVE NOTE: Technical report.  
APR 77 19P Billera, Louis J. (Heath,  
David C. ; Raanan, Joseph ;  
REPT. NO. TP-331  
CONTRACT: N00014-75-C-0678. NSF-MPS-75-02021

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Game theory. \*Costs. Rates.  
Allocations. User needs. Public utilities.  
Telephone systems. Scheduling.  
Distribution (Economics). Mathematical  
programming

(U)

IDENTIFIERS: \*Billing. Nonatomic games

(U)

The problem of determining rates is considered for a situation in which services are purchased in bulk, but they have to be paid for by a large number of small users. The desired rates must be 'fair' and they must cover all costs. The problem is formulated as a non-atomic game and solved by using the value of the game. In addition to the general problem, a detailed actual case is presented together with computational methods and results.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 978 14/1 13/10 15/5 5/3

INTERNATIONAL MARITIME ASSOCIATES INC WASHINGTON DC

A Study of Ship Acquisition Cost  
Estimating in the Naval Sea Systems  
Command. Appendices.

(U)

DESCRIPTIVE NOTE: Final rept.

OCT 77 1298P

CONTRACT: N00024-77-C-2013

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Appendices to report dated 28 Oct 77, AD-A046 977. See also AD-A046 976.

DESCRIPTORS: \*Naval vessels. \*Naval procurement.  
\*Cost estimates. \*Shipbuilding. Cost analysis.  
Inflation(Economics). Labor. Materials.  
Japan. Sweden. Merchant vessels.  
Sizes(Dimensions). USSR. Nuclear powered  
submarines. Aircraft carriers. Shipyards. Cost  
overruns. Scheduling. Delivery. Modification.  
Aircraft. Guided missiles. Sonar equipment. Fire  
control systems. Weapon systems

(U)

IDEALISERS: Overhead. Cost monitoring. General  
Accounting Office. Close in weapon system

(U)

This section of the report provides an overview of the shipbuilding industry, placing into perspective the cost problems experienced in naval ship construction. It describes the nature of the industry and its problems, emphasizing: The concentration of the industry as reflected by an increasingly limited number of shipbuilders; The sudden, erratic movement in labor and material cost that has impacted shipbuilders worldwide; That NAVSEA's inability to accurately estimate costs in the recent environment is shared by shipbuilders in the U.S. and other countries; and General background data is also provided for reference purposes in understanding the environment within which NAVSEA must estimate future ship construction costs. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 977 14/1 13/10 15/5 5/3

INTERNATIONAL MARITIME ASSOCIATES INC WASHINGTON DC

A Study of Ship Acquisition Cost  
Estimating in the Naval Sea Systems  
Command.

(U)

DESCRIPTIVE NOTE: Final rept.

OCT 77 468P

CONTRACT: N00024-77-C-2013

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Appendices dated Oct 77.

AD-A046 978 and AD-A046 976.

DESCRIPTORS: \*Naval vessels. \*Naval procurement.  
\*Cost estimates. \*Shipbuilding. Cost analysis.  
Radar equipment. Fire control systems. Sonar  
equipment. Nuclear powered submarines. Labor.  
USSR. Inflation(Economics). Japan.  
Environmental protection. Minorities. Shipyards.  
Industries. Naval aviation. Naval shore  
facilities. Models. Performance(Human).  
Floating docks. Drydocks. Budgets

(U)

This is a report about cost estimating in naval procurement and the ability of Navy estimators. Particularly in the Naval Sea Systems Command, to adequately forecast required program funding. It is also an attempt to carefully ascertain where improvements can be made. It is recognized that the cost estimating problem is extremely complex and, if at all possible, improvements should be made. Obviously, the national interest is at the heart of the matter. It is believed that specific action can be taken by NAVSEA to improve its capability and inasmuch as other government and industrial organizations interact in procurement activities so profoundly, areas are pointed to where NAVSEA may want to complement actions by organizations outside its control.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 976 14/1 13/10 15/5 5/3

INTERNATIONAL MARITIME ASSOCIATES INC WASHINGTON DC

A Study of Ship Acquisition Cost  
Estimating in the Naval Sea Systems  
Command. Executive Summary.

(U)

OCT 77 58P

CONTRACT: N00024-77-C-2013

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A046 977 and AD-A046 978.

DESCRIPTORS: \*Naval vessels, \*Naval procurement, \*Cost estimates, \*Shipbuilding, Cost overruns, Inflation(Economics), Materials, Labor, Social welfare, Productivity, Labor unions, Cost analysis, Structures, Auxiliary, Weapon systems, Propulsion system components, Surveillance, Integrated systems, Army procurement, Computer applications, Industries, Nuclear powered submarines, Profits

(U)

This is a report about cost estimating in naval procurement and the ability of Navy estimators, particularly in the Naval Sea Systems Command, to adequately forecast required program funding for ship construction and conversion. It is also an attempt to carefully ascertain where improvements can be made. It is recognized that the cost estimating problem is extremely complex and, if at all possible, improvements should be made. Obviously, the national interest is at the heart of the matter. It is believed that specific action can be taken by NAVSEA to improve its capability and inasmuch as other government and industrial organizations interact in procurement activities so profoundly, areas are pointed to where NAVSEA may want to suggest complementary actions by organizations outside its control. This document is a summary of a much longer Final Report which examines these important issues in depth. To the extent a short summary can analyze complex problems and outline proposed solutions, this document addresses that objective. (Author)

(U)

AD-A046 976

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 829 17/9 1/5

TRANSPORTATION SYSTEMS CENTER CAMBRIDGE MASS

Preliminary Limited Surveillance Radar (LSR)  
Cost/Benefit Analysis.

(U)

DESCRIPTIVE NOTE: Final rep., Dec 76-Apr 77.

OCT 77 52P Ref: Paul S. :

REPT. NO. TSC-FAA-77-16

MONITOR: FAA-ASP 77-10

UNCLASSIFIED REPORT

DESCRIPTORS: \*Search radar, \*Cost benefits, \*Airport radar systems, Short range(Distance), Air traffic control systems, Air traffic control system analysis, Costs

(U)

IDENTIFIERS: Limited surveillance radar

(U)

This report presents the findings of a cost/benefit analysis of the deployment of a new Limited Surveillance Radar (LSR). An LSR is an inexpensive, single channel, short-range (about 20 miles), primary radar for use at approach control facilities which cannot economically justify an Airport Surveillance Radar/Radar Beacon System (ASR/RBS). An LSR can also be used in tower cabs to aid in VFR operation where a BRITE display is not feasible due to coverage limitations dictated by obstructions or distance from the parent radar facility. The study is preliminary in that it is brief and uses rough estimates and assumptions for both benefits and costs. Its purpose is to give a gross estimate of the current deployment potential of the LSR and to aid in decisions regarding further system analysis, development, and testing. (Author)

(U)

AD-A046 829

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 810 5/1 6/5 5/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO

The Cost of Caring.

(U)

DESCRIPTIVE NOTE: Master's thesis.

AUG 77 192P Hopkins, Doran L. ;

McMillen, Philip H. ; Mahr, Thomas A. ;

REPT. NO. AFIT-CI-77-82

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Audiovisual aids, \*Public relations,  
 \*Medical services, Costs, Information transfer,  
 Mass media, Photographs, Community relations,  
 Medical personnel, Colorado, Theses

(U)

The Arapahoe Medical Society (AMS) of Denver, Colo. approached the Dept. of Mass Communications, University of Denver, concerning the feasibility of a sound synchronized slide show to serve as a vehicle to inform the community about rising medical costs. The AMS Public Relations Committee requested that the slide show be designed for a cross section of the community, since they intended to present it to various civic organizations. In addition, they wanted the show presented to school audiences, elected government officials, and members of the electronic and print media. The authors recommended a 12-15 minute slide show that would be general in content and be used as part of a speaker's bureau program. This thesis describes their work in producing the slide show entitled: The Cost of Caring. Text of the script is included.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 808 9/2 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

A Preliminary Calibration of the RCA Price S Software Cost Estimation Model.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 77 110P Schneider, John. IV:

REPT. NO. AFIT/GSM/SM/77S-15

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programming, \*Input, \*Cost estimates, Data acquisition, Parameters, Avionics, Mathematical models, Systems analysis, Interfaces, Real time, On line systems, Calibration,

Theses

(U)

IDENTIFIERS: PRICE S software cost estimate model, Software

(U)

Each year, the Department of Defense spends more than three billion dollars on computer software, yet software managers are notoriously unable to predict the cost of software development projects. This is especially true of preliminary cost estimates made during the formative stages of a project. Even when parametric relationships are used, such estimates depend heavily on analogy with previously developed systems. The purpose of this research is to investigate ways of gathering and using descriptive data for the purpose of making preliminary software cost estimates. A methodology for the collection of descriptive information on software systems was developed and used to describe several avionics software systems. The data thus gathered was then used to 'calibrate' the PRICE S software cost estimation model by relating particular values of several 'subjective' PRICE S input parameters to the observed software system data. It was found that certain characteristics of software systems could be objectively measured, and that the PRICE S model is not incompatible with avionics software systems developed for the Aeronautical Systems Division of Air Force Systems Command. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 586 15/5 9/2 19/1

JOINT CONVENTIONAL AMMUNITION PROGRAM COORDINATING GROUP  
ROCK ISLAND IL DECISION MODELS DIRECTORATEAnalysts' Manual for the Multiple-Bid  
Evaluation Model for Procurement Planning and  
Placement. (U)DESCRIPTIVE NOTE: Final rept. FY 1976-1977,  
NOV 77 66P Todaro, John B.; Robinson,  
George B.;  
REPT. NO. JCAP-DM-T710

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A043 844.

DESCRIPTORS: \*Army procurement, \*Cost analysis,  
\*Ammunition, Dynamic programming, Logistics  
management, Contracts, Selection, Assessment,  
Allocations, Decision making, Multimode,  
Computerized simulation, Costs, Ranking,  
Computer program documentation, Mathematical models,  
Flow charting, Programming manuals, Army  
equipment, Military requirements, Logistics  
planning, Management information systems, Operations  
research (U)IDENTIFIERS: \*Multiple bid evaluation program,  
Bids, MBEM computer program, Bid evaluation (U)

This report documents the Multiple-Bid  
Evaluation Model (MBEM) as adapted and used by  
the JCAP Production and Mobilization Planning  
Division. The model uses dynamic programming to  
conduct bid analyses for selection of a combination  
of suppliers to be awarded portions of a total  
contract. These analyses include the finding of  
least cost and next least cost solutions for the  
total requirement and for fractions of the total  
requirement. In the case of procuring a single item  
for a single buy period, the model can also find  
least and next least costs for each possible number  
of suppliers. This additional analysis enables  
management to evaluate the costs of using additional  
suppliers in order to have a broader production base.  
The model consists of four independent computer  
programs for the following situations: (1) a  
single buy period and a single type item; (2)  
two buy periods, or two items for one buy period;

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 279 1/3 11/4 14/1

HUGHES HELICOPTERS CULVER CITY CALIF

Flight Test of a Composite Multi-Tubular  
Spar Main Rotor Blade on the AH-1G  
Helicopter. Volume II. Cost Estimates and  
Process Specifications. (U)DESCRIPTIVE NOTE: Final rept. Jun 74-Jan 77.  
AUG 77 79P Head, Robert E.;  
REPT. NO. HH-76-281-Vol-2  
CONTRACT: DAAJ02-74-C-0055  
PROJ: 1F263211DB41  
TASK: 00  
MONITOR: USAAMRDL TR-77-19B

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A046  
176.DESCRIPTORS: \*Rotor blades, \*Helicopter rotors,  
\*Composite materials, \*Cost estimates, Tubular  
structures, Spars, Filament wound construction,  
Industrial production, Production rate,  
Specifications, Tools, Flight testing, Labor,  
Manhours, Military requirements, Standards,  
Radar cross sections (U)IDENTIFIERS: \*AH-1G aircraft, PE63211A,  
ASB41, WU003 (U)

The objectives of this program were to design a  
composite main rotor blade in the multi-tubular spar  
configuration to be directly interchangeable (in  
pairs) with the production metal (540) blades  
on the AH-1G helicopter. have increased fatigue  
life, invulnerability to the 23mm ballistic threat,  
low radar cross section, and low fabrication cost.  
Manufacturing technology was developed and  
described in a Process Specification.  
Laboratory, ground, and flight tests demonstrated  
that the wet filament wound, co-cured blade met, and  
in some cases surpassed, all objectives and could be  
adapted for Army service. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 665 15/5 5/3 12/1

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

Problems of the Improvement of Estimation,  
Account, Analysis and Forecasting the Prime  
Cost of Air Transportation.

(U)

MAY 77 84P Minoshnikov, A. V. ;  
REPT. NO. FTD-ID(RS)T-0627-77

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Unedited machine trans. of Trudy.  
Rizhskogo Krasnoznamennogo Instituta Inzhenerov  
Grazhdanskoy Aviatsii imeni Leninskogo Komsomola,  
Riga (USSR) Sb. 7 and 8, Issue 216 p51-87 1972.  
Text in English; Tables in Russian.

DESCRIPTORS: \*Air transportation, \*Costs, Economic  
analysis, Forecasting, Mathematical models, Cost  
effectiveness, Equations, Maintenance, Trade off  
analyses, Aviation personnel, Cargo, Cost  
analysis, Scheduling, Translations, USSR

(U)

Problems of the Improvement of Estimation, Account,  
Analysis and Forecasting the Prime Cost of Air  
Transportation--Translation.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 621 13/6 5/3 14/1

ARMY TANK-AUTOMOTIVE MATERIEL READINESS COMMAND WARREN MI  
SYSTEMS ANALYSIS DIV

Maintenance Expenditure Limits (MEL)  
Tires.

(U)

DESCRIPTIVE NOTE: Final rept..  
AUG 77 22P Kenley, Jack ;  
REPT. NO. TARCOM-SA-7T-10

UNCLASSIFIED REPORT

DESCRIPTORS: \*Tires, \*Cost analysis, \*Cost  
benefits, Maintenance, Repair, Reclamation,  
Nondestructive testing, Ultrasonic inspection,  
Costs, Cost effectiveness, Quality control,  
Replacement, Ground vehicles, Military vehicles

(U)

IAC ACCESSION NUMBER: NT-015511

IAC DOCUMENT TYPE: NTIAC -MICROFICHE--

The objective of this study was to derive an  
approach to determine a valid Maintenance  
Expenditure Limit (MEL) for tires. Historical  
data and field tests results were examined. Initial  
data from a Product Assurance test in Ober  
Ramstadt Germany was also used. It was found  
that ultrasonic testing of tire carcasses could  
provide reliable information about the quality of the  
carcass and its useful remaining life. The reading  
from the ultrasonic testing device is adjusted so  
that a new tire reads 50% of full scale. It is  
estimated that about 22% of the 1100 x 20 tires  
coming in to be retread are defective based on an  
ultrasonic reading of 20% of full scale. If this  
defective percentage is applied to the top ranking 20  
tires (in terms of retread dollars spent) the  
annual cost savings would be in excess of \$1,000,  
000. A revised MEL for tires should state that  
tires be retread, given the carcass has at least one  
remaining life: the remaining life being determined  
by pass/fail ultrasonic measurement using the 20%  
full scale as the standard for now. It is  
recommended that testing continue to determine the  
exact correlation between ultrasonic reading and  
remaining tire life. (Author)

(U)

IAC SUBJECT TERMS: N--(U)TIRES, MAINTENANCE, COSTS, COST  
EFFECTIVENESS, REPAIRS, ULTRASONIC INSPECTION, ULTRASONICS,  
QUALITY CONTROL, MILITARY EQUIPMENT, VEHICLES.

AD-A046 621



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 277 11/8 13/6 5/3 13/2

SOUTHWEST RESEARCH INST SAN ANTONIO TEX ARMY FUELS AND LUBRICANTS RESEARCH LAB

Evaluation of Environmental and Economic Benefits through Use of Synthetic Motor Oils.

(U)

DESCRIPTIVE NOTE: Final rept.,

SEP 77 32P Tosh, John D.; Russell, John

A. ;

REPT. NO. AFLRL-91

CONTRACT: DAAG53-75-C-0232

UNCLASSIFIED REPORT

DESCRIPTORS: \*Lubricating oils, \*Automotive vehicles, \*Cost benefits, \*Environmental management, Drainage, Oil filters, Intervals, Field tests, Maintenance, Specifications, Military requirements, Mineral oils, Synthetic materials, Crankcases, Test methods, Waste disposal, Operational test and evaluation

(U)

Cost and environmental benefits of extended-drain engine lubrication were evaluated by means of a two-year field program at Letterkenny Army Depot, Pennsylvania. Four MIL-L-46152 crankcase lubricants (two mineral and two synthetic-base) were utilized in routine post operation. Each lubricant was assigned to one of four 25-vehicle fleets, and each fleet then operated exclusively on that lubricant. During this time there were no engine failures that could be attributed to the extended-drain program. Therefore, it is concluded that (a) extended-drain engine operation has potential for both economic and ecological benefits to Army field operations, and (b) the synthetic lubricants employed showed no particular performance advantages over the mineral oils. Consequently, the higher cost of synthetic lubricants would make them less attractive for widespread Army utilization. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 269 5/3 5/1 5/4

CENTER FOR NAVAL ANALYSES ARLINGTON VA

Cost-Effectiveness of Potential Federal Policies Affecting Research and Development Expenditures in the Auto, Steel and Food Industries.

(U)

OCT 77 40P Goldberg, Lawrence ; REPT. NO. CNA-Professional Paper-207

UNCLASSIFIED REPORT

DESCRIPTORS: \*Industrial research, \*Finance, \*Research management, United States Government, Allocations, Policies, Cost effectiveness, Steel industry, Automotive industry, Food, Economic analysis, Cost estimates, Taxes, Credits, Time series analysis

(U)

IDENTIFIERS: Food industry, Research and development, Prices, Demand (Economics)

(U)

This paper contains the writer's preliminary analysis of the demand for company financed research and development expenditures (CR/D) in three manufacturing industries. Based upon estimates of the demand for CR/D, he estimated the costs and effects of two public policies that could affect R/D expenditures: (1) changes in the level of federally financed R/D expenditures; and (2) changes in the cost of private R/D through tax credits. He develops a capital theoretic framework in which he assumes that CR/D generates knowledge or 'research capital' that may increase output demand or reduce costs. Based upon his capital theoretic framework, the demand for the research capital stock is estimating using industry level time-series data for 1956-74. These time-series data enable him to obtain the first measures of changes in the price of knowledge upon the demand for CR/D, and also to measure the impact of changes in federal R/D expenditures upon CR/D.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 249 15/5 14/1 5/1

## DECISION SYSTEMS DAYTON OH

A Study of the Cost-Effectiveness of  
Inventory Management Policies Based on  
Average Requisition Size.

(U)

DESCRIPTIVE NOTE: Final rept. 3 Dec 76-31 Jul 77,  
AUG 77 6P Demmy, W. Steven ;  
REPT. NO. RM-77-04  
CONTRACT: F49620-77-C-0063  
PROJ: 2304  
TASK: A5  
MONITOR: AFOSR TR-77-1230

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Rept. no. RM-77-01, AD-  
A046 154.

DESCRIPTORS: \*Logistics management. \*Inventory  
control. \*Cost effectiveness. Inventory analysis.  
Procurement. Simulation. Cost models

(U)

This paper summarizes the accomplishments and lists  
associated documentation associated with Decision  
Systems Contract F49620-77-C-0063. The  
object of the study was to evaluate the relative  
cost-effectiveness of three alternate formulas  
developed by Presutti, and Trepp for use in  
depot-level EOQ inventory management. Simulation  
studies using actual demand histories for Air  
Force items were used to evaluate the operating  
characteristics of each formula. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 105 5/1

## AIR FORCE ACADEMY COLO

A General Technique for R and D Cost  
Forecasting.

(U)

DESCRIPTIVE NOTE: Final rept..  
SEP 77 65P Weida, William J. ;  
REPT. NO. USAFA-TR-77-12

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates. \*Research management.  
Forecasting. Department of Defense. Weapon  
systems. Costs. Data bases. Mathematical  
prediction. Defense planning. Military budgets.  
Cost models. Curve fitting  
IDENTIFIERS: Research and development. Growth  
curves. Prices

(U)

(U)

A general model for R and D cost forecasting  
was developed based on an expenditure pattern  
analysis of twenty-one current weapon systems. This  
model which was validated on an additional twelve  
weapons systems, shows that R and D expenditures  
follow a certain, well-defined pattern, regardless of  
the type of system involved. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 012 12/2 14/1

COLORADO UNIV BOULDER SYSTEMS ENGINEERING LAB

Reduction of the Cost of Feedback in Systems  
with Large Parameter Uncertainties. (U)

DESCRIPTIVE NOTE: Interim rept..

AUG 77 20SP Rosenbaum, Patrick ; Horowitz,

Isaac ;

CONTRACT: AFOSR-76-2946

PROJ: 2304

TASK: A1

MONITOR: AFOSR TR-77-1224

UNCLASSIFIED REPORT

DESCRIPTORS: \*Control theory, \*Cost analysis,  
\*Systems engineering, Closed loop systems,  
Feedback, Tolerances (Mechanics), Control,  
Noise reduction, Power spectra, Time studies,  
Invariance, Nonlinear systems, Transfer functions,  
Mathematical filters (U)  
IDENTIFIERS: WUAFOSR2304A1, PE61102F (U)

This work deals with the synthesis of feedback systems to achieve specified performance tolerances, despite large uncertainty in a constrained part of the system, denoted as the plant. Part of this work deals with linear time-invariant (lti) plants where the cost of feedback, if lti compensation is used, is primarily in the bandwidth of the feedback loop being much larger than that of the system as a whole - making the system very sensitive to sensor noise. Here, the objective is to reduce the loop bandwidth by means of non-lti compensation. The result is a very significant reduction in loop bandwidth and with it, system sensitivity to sensor noise. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 006 5/1 5/3

PURDUE UNIV LAFAYETTE IND

Strategic Implications of the Experience  
Curve Effect for Avionics Acquisitions by the  
Department of Defense. (U)

DESCRIPTIVE NOTE: Final rept..

AUG 77 310P Cheney, William Fitch ;

MONITOR: AFIT CI-78-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Doctoral thesis.

DESCRIPTORS: \*Military procurement, \*Cost models,  
Department of Defense, Manufacturing, Contracts,  
Costs, Quantity, Learning curves, Theory,  
Mathematical models, Parametric analysis, Air  
Force procurement, Avionics, Aircraft industry,  
Productivity, Economic analysis, Investments,  
Scale, Profits, Regression analysis, Theses (U)  
IDENTIFIERS: \*Experience curve theory, Prices,  
Competition, Specialization (U)

The Department of Defense (DoD) has supported numerous studies of learning curve theory, mainly in the context of the aircraft and airframe industries. However, no research has yet been documented with respect to experience curve theory (as distinguished from learning curve theory) for either buyers or sellers in the relatively specialized environment of the military market place. This dissertation describes investigations into the applicability and strategic implications of the experience curve effect for avionics purchases. While experience curve theory seeks to explain product cost-quantity and price-quantity relationships in terms similar to those of learning curve theory, it also recognizes the influences of such managerially controllable factors as investment, specialization, and scale. The most significant finding of this study confirmed the applicability of experience curve theory in the military market place in spite of the unique characteristics of that market (i.e., cumulative average unit price parallels cumulative average total manufacturing cost). (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 889 14/1 5/3 12/1

UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF  
QUANTITATIVE BUSINESS ANALYSISApplication of Nonparametric Methods in the  
Statistical and Economic Analysis of  
Warranties.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
77 17P Blischke, Wallace R. ;  
Scheuer, Ernest M. ;  
CONTRACT: N00014-75-C-0733

## UNCLASSIFIED REPORT

Availability: Pub. in The Theory and  
Applications of Reliability, v2 p259-273 1977.  
SUPPLEMENTARY NOTE: Prepared in cooperation with  
California State Univ., Northridge.DESCRIPTORS: \*Cost analysis, \*Nonparametric  
statistics, \*Guarantees, Life cycle costs,  
Reliability, Reprints

(U)

IDENTIFIERS: \*Warranties, Renewal theory.  
WUNR042323

(U)

Reprint: Application of Nonparametric Methods in  
the Statistical and Economic Analysis of Warranties.

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 753 19/6 5/3

ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND IL:  
SYSTEMS ANALYSIS DIRECTORATE105MM Howitzer Production Trade-Off  
Analysis.

(U)

DESCRIPTIVE NOTE: Final rept..  
AUG 77 34P Trier, Norman H. ;  
REPT. NO. DRSAR/SA/N-69

## UNCLASSIFIED REPORT

DESCRIPTORS: Howitzers, \*Industrial production,  
\*Cost analysis, Munitions industry, Maintenance,  
International trade, Military forces(Foreign),  
Income, Trade off analyses, Inventory analysis,  
Assessment, Investment expenditures, Army  
equipment, Army procurement

(U)

IDENTIFIERS: \*105-mm Howitzers, XM-204  
Howitzers(105-mm), M-101A1  
Howitzers(105-mm), M-102 Howitzers(105-  
mm), FMS(Foreign Military Sales), Foreign  
Military Sales

(U)

This report addresses (a) the cost of producing  
XM204 Howitzers to replace the Army's current  
assets of M101A1 and M102 Howitzers, and  
(b) the potential net revenues (total revenues  
minus overhaul costs) of selling overhauled  
M101A1 and M102 Howitzers via Foreign  
Military Sales (FMS). For part (a),  
various mixes of XM204, M101A1, and M102  
Howitzers were considered, and for part (b),  
various selling prices were considered. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 503 15/5

KAISER ENGINEERS OAKLAND CALIF

Plant Equipment Package (PEP) Modernization Program. Volume 7. PEP Economic model.

(U)

JUN 77 129P  
REPT. NO. 75-36-R-7  
CONTRACT: DAAA21-75-C-0303

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Stetter Associates, Inc. See also Volume 8, AD-A045 504.

DESCRIPTORS: \*Munitions industry. \*Industrial equipment. \*Management planning and control. \*Cost analysis. National defense. Mobilization. Combat readiness. Army planning. Logistics planning. Production. Procurement. Military equipment. Logistics support. Trade off analyses. Mathematical models. Computer programs. Input. Flow charting

(U)

IDENTIFIERS: \*Plant equipment packages. \*Modernization. PEP (Plant equipment packages)

(U)

The PEP economic model assigns production to the PEP lines to satisfy mobilization requirements at a minimum cost. The model analyzes the tradeoff between each line's inventory costs and modernization costs in selecting existing lines or their modernized counterparts to operate during mobilization. The least costly combination of lines is selected. The technique of mixed-integer linear programming, a standard procedure for solving cost optimization problems, was adapted to the PEP modernization problem. The objective of the linear model is to minimize the total system cost composed of inventory, production and modernization costs. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 461 15/5 14/1 13/10

NAVY FLEET MATERIAL SUPPORT OFFICE MECHANICSBURG PA  
OPERATIONS ANALYSIS DEPT

Conventional AS Load List Study.

(U)

SEP 77 54P Burdick, L. J. :  
REPT. NO. 130

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval logistics. \*Logistics support. \*Inventory control. \*Cost models. \*Tenders (Vessels). \*Submarines. Economic models. Supplies. Normal distribution. Optimization

(U)

IDENTIFIERS: Load list study. LPN-FMSO-971260

(U)

This study evaluates alternative techniques for computing conventional submarine tender load lists, given specified performance goals. Areas that are evaluated include: (1) the use of alternative demand distributions; (2) the use of alternative techniques for controlling range; and (3) the use of alternative optimization models. Alternatives are evaluated separately for equipment-related and nonequipment-related items. The various techniques are evaluated using actual submarine demand data. The models are evaluated in terms of units effectiveness, requisitions effectiveness, and range effectiveness. A common model is recommended for computing conventional and FBX (Fleet Ballistic Missile) submarine tender load lists. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 447 5/9 14/1

DEFENSE SYSTEMS MANAGEMENT COLL. FORT BELVOIR VA

Training Developments: A Means to Reduce Life Cycle Costs.

(U)

DESCRIPTIVE NOTE: Study project rept., MAY 77 53P Caver, Troy Verno. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Teaching methods, \*Cost benefits, \*Job training, Military training, Cost models, Life cycle costs, Savings, Job satisfaction, Performance(Human), Investment expenditures, Equipment, Trade off analyses, Defense systems

IDENTIFIERS: Project management

(U)

(U)

This report examines new training concepts developed throughout DOD over the past decade. The concepts that show promise for reducing life cycle costs are considered for trade-offs with hardware developments. The process of trade-off considerations is treated with a marginal cost-marginal benefit analysis (put the investment where it provides the biggest return). Then a sensitivity analysis is conducted on parameters affected by training using a computer model to determine a trend in life cycle costs/savings. It is concluded that many benefits can be derived by increasing the share of the investment in the training subsystem although it may be at the cost of the hardware subsystem in some cases. These investments appear to be best placed in training and technical documentation or in job performance aids. Not only should this type investment reduce the life cycle cost but also provide job enrichment, higher operational availability, fewer maintenance personnel requirements, fewer training course requirements, increased systems effectiveness, and other savings.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 421 13/2 5/3

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Cost of Recycling Waste Material from Family Housing.

(U)

DESCRIPTIVE NOTE: Final rept.,

SEP 77 61P Freeman, R. E. ; Donahue, B. A. ; Kloster, S. E. ; Schanche, G. W. ; Smith, E. D. ;

REPT. NO. CERL-TR-N-29

PROJ: 4A762720A896

TASK: T2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Waste recycling, \*Solid wastes, Cost analysis, Costs, Military facilities, Housing(Dwellings), Residential section, Marketing, Resource management

(U)

(U)

IDENTIFIERS: PE62720A, AS896, WU007

The purpose of this research was to determine the cost of recycling waste from a selected family housing area at Fort Bragg through source separation in order to evaluate the feasibility of solid waste recovery and recycling at a military installation. This report presents (1) analysis of the waste volume and composition from the Normandy Heights area at Fort Bragg, (2) data showing the current cost of refuse collection and disposal in the Normandy Heights area, (3) a market analysis for recyclable material in the Fort Bragg area, and (4) a design for the recyclable material recovery strategy that was tested and the costs associated with this strategy. (5) participation rates of Normandy Heights residents, (6) waste reduction rates, and (7) collection labor data. It was found that recycling by source separation could be cost-effective, could reduce the amount of refuse to be landfilled, and could decrease the number of weekly collections. It was established that military family housing refuse is comparable to that of the civilian sector and that military personnel are willing to participate in a source separation recycling program. The research indicated that experienced personnel should collect recyclables. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 415 9/2 14/1 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO

A Pre-Processor for a Structured Version of COBOL.

(U)

DESCRIPTIVE NOTE: Master's thesis.

MAR 77 78P Hilb, Robert Clifford :  
REPT. NO. AFIT-CI-77-55

UNCLASSIFIED REPORT

Availability: Microfiche copies only.

DESCRIPTORS: \*COBOL, \*Preprocessing, \*Costs,  
\*Computer programming, Acquisition, Maintenance,  
Budgets, Digital computers

(U)

IDENTIFIERS: Structured programming languages,  
Nesting(Subroutines), IF statements, DO  
UNTIL statements, PERFORM statements, Top down  
design

(U)

A version of COBOL that permits structured programming was designed. It was implemented using a pre-processor that outputs standard COBOL. The pre-processor will indiscriminately run programs that are either structured or nonstructured, or with very limited restrictions. Programs with a mixture of both. A structured IF was included as a modification of the COBOL IF. In line looping was created with a redefinition of the PERFORM, maintaining all of its capabilities and adding a DO UNTIL. The PERFORM was also modified to allow a CASE construct. All new structures are completely nestable. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 210 15/5 14/1

DRC INVENTORY RESEARCH OFFICE PHILADELPHIA PA

R. Q. Inventory Problem with Unknown Mean Demand and Learning (A Sequel).

(U)

DESCRIPTIVE NOTE: Technical rept.,

SEP 77 23P Kaplan, Alan J. :  
REPT. NO. IR-77-6

UNCLASSIFIED REPORT

DESCRIPTORS: \*Inventory control, \*Cost models,  
\*Spare parts, Mathematical models, Histograms,  
Integral equations, Methodology, Bayes theorem,  
Distribution functions, Poisson density functions  
IDENTIFIERS: Poisson distribution, Backorder costs

(U)

(U)

Report concerning management of new items for which only a Bayesian prior distribution on the mean is available. As demand occurs, the prior is updated and reorder point and reorder quantity are revised. In an earlier paper, a heuristic solution to finding an optimum reorder point was presented. This report introduces an alternative cost structure, discounted cash flow, and adapts the heuristic approach to this cost structure. It reports on the results of simulation using real world demand data, which proved favorable to this approach. It discusses a modification to current approaches for determining cost of backorder. This report was motivated by concern with management of low failure items. For such items the discounted cash flow structure is most appropriate. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A045 164 13/8 9/5 15/5 15/3

SCIENCE APPLICATIONS INC MCLEAN VA MANUFACTURING TECHNOLOGY PROJECT OFFICE

The Navy Manufacturing Technology Electronics Study. A Plan for Cost Effective Electronics in the Navy. Volume III. Appendices.

(U)

DESCRIPTIVE NOTE: Final rept.

JUN 77 258P

REPT. NO. SAI-MT-2010-Vol-3, SAI-78-524-WA-Vol-

3

CONTRACT: N00039-77-C-0095

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A045 162.

DESCRIPTORS: \*Manufacturing. \*Electronic equipment. \*Weapon systems. \*Procurement. \*Cost effectiveness. Naval equipment. Electric cables. Electron tubes. Integrated circuits. Printed circuit boards. Hybrid circuits

(U)

IDENTIFIERS: Navionics. Cabinets. Top down analysis

(U)

Contents: Electronics MT Project Descriptions; MT Incentives for Industry; Industrial Interview Objectives and Procedures; Army ECOM Conference -- Specific Findings; Top-Down Analysis of Navy Weapons Systems Electronics Costs; Economic Analysis and Computer Program Description; Equipment List and Study Results Related to Specific Findings; Bibliography.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A045 163 13/8 9/5 15/5 15/3

SCIENCE APPLICATIONS INC MCLEAN VA MANUFACTURING TECHNOLOGY PROJECT OFFICE

The Navy Manufacturing Technology Electronics Study. A Plan for Cost Effective Electronics in the Navy. Volume II. A Candidate Electronics Manufacturing Technology Plan.

(U)

DESCRIPTIVE NOTE: Final rept.

JUN 77 134P

REPT. NO. SAI-MT-2010-Vol-2, SAI-78-524-WA-Vol-

2

CONTRACT: N00039-77-C-0095

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, AD-A045 164.

DESCRIPTORS: \*Manufacturing. \*Electronic equipment. \*Weapon systems. \*Procurement. \*Cost effectiveness. Naval equipment. Electric cables. Electron tubes. Integrated circuits. Printed circuit boards. Hybrid circuits

(U)

IDENTIFIERS: Navionics. Cabinets. Top down analysis

(U)

This volume contains a candidate manufacturing technology (MT) plan for Navy electronics formulated as a result of the study described briefly in Volume I and in detail in Volume III of this report. The purpose of this volume is to give information on the aspects of the program such as: (1) savings minus investment. (2) savings to investment ratio. (3) timeframe. (4) applicable weapons systems. and (5) manufacturing cost category of cost savings on an overall, as well as individual, project basis.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 162 13/3 9/5 15/5 15/3

SCIENCE APPLICATIONS INC MCLEAN VA MANUFACTURING TECHNOLOGY PROJECT OFFICE

The Navy Manufacturing Technology Electronics Study. A Plan for Cost Effective Electronics in the Navy. Volume I. Study Synopsis.

DESCRIPTIVE NOTE: Final rept. 1 Dec 76-30 Jun 77. JUN 77 38P Knasel, T. M. ; McGahan, J. T. ;

REPT. NO. SAI-MT-2010-Vol-1. SAI-78-524-WA-Vol-1

CONTRACT: N00039-77-C-0095

MONITOR: GIDEP E119-0746

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A045 163.

DESCRIPTORS: \*Manufacturing. \*Electronic equipment. \*Weapon systems. \*Procurement. \*Cost effectiveness. Naval equipment. Electric cables. Electron tubes. Integrated circuits. Printed circuit boards. Hybrid circuits

IDENTIFIERS: Navionics. Cabinets. Top down analysis

This study examined investment opportunities in Manufacturing Technology (MT) related to electronic systems procurement and presents an initial candidate plan for the FY80 to 84 timeframe. The major cost areas for electronic products were determined by a top down study of the detailed breakout of electronics subcomponent and labor categories. Results indicate that about half of electronics costs are found in seven key material areas. The remainder of the cost is apportioned into 4 labor areas. The breakout into 11 final categories is based on data for nearly 100 systems. These systems represent a broad spectrum of Navy electronics procurement. The 11 cost categories are cables and cabinets, sensors and special tubes, integrated circuits, small hardware and printed circuit boards (without components attached), discrete semiconductors, hybrid circuits, passive components, assembly labor, fabrication labor, support labor, and test labor.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A045 082 12/1 14/1 5/2

DECISIONS AND DESIGNS INC MCLEAN VA

An Attitudinal Study of the Home Market for Solar Devices.

(U)

DESCRIPTIVE NOTE: Technical rept. Mar-Sep 77 SEP 77 71P Campbell, Vincent M. ; Brown, Rex V. ; Rhee, Thomas R. ; Repici, Dominic J. ;

REPT. NO. TR-77-S-25

CONTRACT: N00014-75-C-0026

UNCLASSIFIED REPORT

DESCRIPTORS: \*Solar heating. \*Commercial equipment. \*Cost analysis. \*Surveys. Public opinion. Attitudes (Psychology). Market research. Projection. Comparison. Public utilities. Statistical analysis. Computer applications. Correlation techniques

(U)

This study estimates that 1.1 million American residences would have home and hot water heated with solar energy by 1985 if the total cost averaged \$20 a month more than the cost of heating with fossil fuels, and initial costs were no barrier. An additional 7.2 million homes would have hot water alone heated with solar energy by 1985 if the total cost was \$5 a month more. These are fairly favorable cost assumptions under current conditions. Almost half (44%) of potential homeowners surveyed would prefer to have their living spaces and hot water heated with solar energy if the total cost averaged \$20 per month more than conventional heating and initial costs were no barrier. Although interest runs high, for various economic and technical reasons only about 1 in 75 American families may have both their home and water heated with solar energy by 1985. Any development that makes solar energy cost-competitive with fossil fuels for home heating will increase the level of market penetration. Another key to how quickly Americans will have solar homes is how fast builders and developers use solar energy in new homes and can assure good performance. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 897 12/2 5/3

STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH

Optimal Selling When the Price Distribution  
is Unknown. (U)

DESCRIPTIVE NOTE: Technical rept..

SEP 77 26P Derman, C.; Lieberman, G. J.

; Ross, S. S.;

REPT. NO. TR- 85

CONTRACT: N00014-75-C-0561

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with  
Columbia Univ., New York under Contract N00014-  
75-C-0620 and California Univ., under Contracts  
N00014-68-A-0200-1036 and DAHC04-74-C-0226.DESCRIPTORS: \*Business, \*Systems approach, \*Cost  
analysis, Decision making, Optimization,  
Distribution functions, Exponential functions,  
Modification, Recall, Bayes theorem, Random  
variables (U)IDENTIFIERS: \*Sales, Martingales.  
WUNR042002 (U)

This paper reconsiders the classical model for  
selling an asset in which offers come in daily and a  
decision must then be made as to whether or not to  
sell. For each day the item remains unsold a  
continuation (or maintenance cost)  $c$  is incurred.  
The successive offers are assumed to be independent  
and identically distributed random variables having  
an unknown distribution  $F$ . The model is  
considered both in the case where once an offer is  
rejected it may not be recalled at a later time, and  
in the case where such recall of previous offer is  
allowed. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 744 15/5 13/10 5/1

ADMINISTRATIVE SCIENCES CORP ALEXANDRIA VA

An Operating and Support Cost Model for  
Aircraft Carriers and Surface Combatants. (U)DESCRIPTIVE NOTE: Final technical rept. 1 Sep 72-31  
Jul 77.

SEP 77 74P Eskew, Henry L.; Frazier,

Thomas P.; Heilig, Paul T.;

REPT. NO. ASC-R-115

CONTRACT: N00014-73-C-0083

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval logistics, \*Naval vessels,  
\*Cost models, Naval operations, Naval equipment,  
Ship personnel, Cost estimates, Naval procurement,  
Combat support, Supplies, Repair, Maintenance,  
Spare parts, Modification, Parametric analysis (U)

The report is in two parts. Part I details the  
development and implementation of an operating and  
support cost model for aircraft carriers and surface  
combatants. Twenty-three O and S cost elements  
were identified and defined, with close adherence  
being maintained to the draft CAIG Operating and  
Support Cost Development Guide for Naval  
Ships, the Navy Resource Model (NARM), and  
the work of the Visibility and management of  
Support Costs (VAMOSC) Study Group. Cost  
data were obtained from three principal sources:  
Navy Cost Information System (NCIS), NARM  
Program Factors, and the Center for Naval  
Analyses' SOCCER Study. Procedures consisting of  
parametric cost-estimating relationships, cost  
factors and 'throughput' estimates were developed for  
the full set of cost elements. Those procedures  
were incorporated into an automated model which was  
then used to estimate annual O and S costs for  
the DD-963 and the FFG-7. Part II of the  
report summarizes all the work accomplished under the  
contract and provides a listing of all technical  
reports submitted. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO ZOM07

AD-A044 609 9/2 5/3 5/1

DOTY ASSOCIATES INC ROCKVILLE MD

Software Cost Estimation Study, Volume  
 11. Guidelines for Improved Software Cost  
 Estimating.

(U)

DESCRIPTIVE NOTE: Final technical rept. 23 Feb 76-23  
 Feb 77.

AUG 77 147P Doty, D. L.; Nelson, P. J.  
 ; Stewart, Kenneth R. ;  
 REPT. NO. TR-151-Vol-2  
 CONTRACT: F30602-76-C-0182  
 PROJ: 5581  
 TASK: 14  
 MONITOR: RADC TR-77-220-Vol-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A042  
 264.

DESCRIPTORS: \*Computer programs, \*Cost estimates,  
 Acquisition, Scheduling, Policies, Budgets (U)  
 IDENTIFIERS: WURADC55811404, PE62702F (U)

This report contains guidelines for developing estimates of computer software cost. Consideration is first given to the initial program estimate which is often made with a paucity of supportive data. Adjustments are presented for modifying the estimate given the availability of additional data. Procedures are presented for assessing the affordability of the resulting estimates. Emphasis is placed on developing a conservative but reasonable best estimate for purposes of program budgeting. Separate consideration is given to steps that should be taken to bring the program in at or below budget. Frequently recurring problems are summarized in their time-phased order of occurrence. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 529 15/3 19/1

ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH KANS

Cost Effectiveness of Smoke Screens  
 Employed by Indirect Fire Means.

(U)

DESCRIPTIVE NOTE: Final rept..  
 JUN 77 97P Brewer, Dennis W. ;

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: \*Smoke screens, \*Deployment,  
 \*Indirect fire, Cost effectiveness, Obscuration,  
 Probability, Computerized simulation, Heuristic  
 methods, Mathematical models, Mortars, Howitzers,  
 Weather, Wind, Computer programs, Theses (U)

This thesis examines cost effectiveness of smoke screens employed by indirect fire means. Large area smoke employment means are included for comparison with the indirect fire means, and for demonstration of a potential source of smoke screens unfamiliar to many tacticians. Optimal tactics for smoke screen employment are not addressed. Two computer models are developed, one for indirect fire means (60mm, 81mm, and 4.2in mortars, as well as 105mm and 155mm howitzers) and one for large area means (smoke generators and smoke pots). Performance characteristics of indirect fire smoke ammunition are incorporated into the model based on recent experimentation by the U.S. Army Systems Analysis Activity. Smoke screens are described by input parameters, which are varied by a heuristic search procedure. These parameters (and their limits) include: weather (lapse, neutral, and inverse conditions with accompanying wind), screen duration (1 through 60 minutes), and sheaf width (100 through 1050 meters). Cost effective preferences are recommended for various smoke screen employment means. Possible areas for future research are suggested. (Author) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 508 5/1 15/5

ORC INVENTORY RESEARCH OFFICE PHILADELPHIA PA

Bare Bones: A Method for Estimating  
Provisioning Budget Requirements in the  
Outyears.DESCRIPTIVE NOTE: Final rept.,  
JUL 77 43P Orr, Donald A. ;  
REPT. NO. IRO-242

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army budgets. \*Systems management,  
\*Cost estimates, Cost models, Standardization,  
Mathematical prediction, Inventory control, End  
items(Products), Logistics support, Ranking,  
CriticalityIDENTIFIERS: Project management, Cost curves,  
SIP(Standard Initial Provisioning), Initial  
provisioning

Different methodologies and procedures are currently used by Project Managers/Commodity Commands in the Army to estimate initial provisioning funding requirements early in the development cycle of a system/end item. These estimates are to project support costs 1-5 years hence, but there has been a lack of quality, uniform methodology, and defensible rationale in the estimates. This paper develops a prototype methodology that reflects, early on, the quantities and costs that would be determined ultimately using the Standard Initial Provisioning model (SIP) just prior to the deployment of the end item in the budget execution year. An important pillar of the new procedure is a cumulative cost curve, generated from the provisioning costs of a small percentage of the total components, from which extrapolations are made of the total provisioning costs for the system. Selection of critical components is made by ranking parts by replacements per 100 end items x component unit price.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 295 13/11 13/8 14/1

NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C  
TRANSLATION DIVProduction of Pipes and Assembly of Pipelines  
and Pipe Systems on Ships (Izgotovleniye i  
Montazh Sudovyykh Truboprovodov i Sistem).

(U)

AUG 77 29P Ganov, E. V. ;  
REPT. NO. NISC-Trans-3953

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. of Mono., Leningrad, 1975  
p5-12, 84-93, 102-109 and 123-126.DESCRIPTORS: \*Pipes. \*Pipelines. \*Production  
engineering. \*Cost analysis. Assembly. Shipboard.  
Welding. Welded joints. Flanges. Life  
expectancy. Pipe fittings. Valves. Stainless  
steel. Copper nickel alloys. Brass. Linings.  
Polyethylene plastics. Zinc coatings.  
Translations. USSR

(U)

Requirements put toward various pipe systems are dictated by application, environmental factors, class of ships and others. Among the most common requirements are the necessary mechanical strength, long service life, easiness in handling (machining assembly) and low cost. The mechanical strength is determined by various properties which are revealed during testing of samples, or the testing of individual pipes under laboratory conditions of the plant-supplier. The service life is determined by the stability of pipes against corrosion, erosion, aging and other destructive environmental forces. Economic considerations also occupy an important place in the selection of material for pipe systems. As a result the majority of the pipelines are built of inexpensive carbon steel pipes, regardless of their comparatively short service life.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 184 21/5 1/3 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSA Study of Opportunistic Replacement  
Tactics for Modular Jet Engine  
Management.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 77 148P Duvall, Thomas J. :Goetz.

Thomas J. :

REPT. NO. AFIT-LSSR-29-77A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Turbofan engines. \*Replacement theory.  
\*Aircraft maintenance. \*Cost effectiveness. Jet  
fighters. Modular construction. Repair.  
Maintenance. Maintenance management. Costs.  
Reduction. Inventory. Computerized simulation.  
Computer programs. Theses

(U)

IDENTIFIERS: Opportunistic replacement. F-100  
engines. F-15 aircraft. Preventative maintenance.  
Failure maintenance

(U)

Opportunistic replacement for the F-100 engine has been previously studied to determine if an opportunistic replacement policy can save jet engine maintenance costs. The idea of opportunistic replacement is to replace an unfailed engine part before it fails while the engine is in the repair shop for some other reason (an opportunity). The costs that have been added in previous research are transportation, packing, manpower, parts, and depot overhaul costs. This study developed a method by which the impact of opportunistic replacement on spare engine and module inventory requirements can be assessed. Several different opportunistic replacement policies were studied and an optimum policy, based on the inventory costs and depot overhaul costs, was found. The optimum policy resulted in a 16 percent savings in initial inventory investment. Data was obtained from the Directorate of Propulsion and Auxiliary Power Systems, Headquarters, Air Force Logistics Command. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 172 21/5 5/3 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSAn Investigation of the Relationship of  
Section Production Costs to Total  
Production Costs of Gas Turbine Engines.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 77 104P Greene, James K. :Stark.

Arthur E. :

REPT. NO. AFIT-LSSR-34-77A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Gas turbines. \*Life cycle costs.  
Turbofan engines. Turbojet engines. Cost  
estimates. Air Force procurement. Concept  
formation. INDUSTRIAL ENGINEERING. Validation.  
Industrial production. Specifications. Military  
requirements. Correlation techniques. Turbine parts.  
Regression analysis. Data acquisition. Theses

(U)

The Air Force Aero Propulsion Laboratory is currently exploring techniques which may be used to estimate the production costs of gas turbine engines in the conceptual and validation phases of system acquisition. This study served as a part of that on-going exploration and was designed to investigate the relationship of engine section production costs to total production costs of gas turbine engines. The results of this research include the following findings: (1) correlation analysis provides an effective technique for determining those relationships; (2) among engine sections, costs of the high pressure turbine and compressor sections demonstrated the highest consistent correlations with total engine production cost; (3) regression analysis using the costs of high pressure turbine and compressor sections appears to hold promise for estimating total engine production cost; (4) a modification of the industrial engineering approach in which a cost estimate of the high pressure turbine section would be 'built up' and used, in turn, to estimate production costs of the complete engine also appears to hold promise; and (5) engine cost data presently collected and retained within the Air Force appear inadequate for estimating studies

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 157 14/1 19/3

OFFICE OF THE COMPTROLLER OF THE ARMY WASHINGTON D C  
DIRECTORATE OF COST ANALYSISArmy Life Cycle Cost Model for Tracked  
Vehicle Systems, (U)JUL 77 144P Marrone, Michael J. ; Clough,  
William S. ; Miller, Edward H. ;  
REPT. NO. DCA-R-50

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models, \*Tracked vehicles,  
\*Weapon systems, \*Life cycle costs, Army  
operations, Cost estimates, Computer applications,  
Production engineering, Manufacturing, Quality  
control, Maintenance, Repair, Spare parts,  
Ammunition, Fire control systems (U)

The Army Life Cycle Cost Model for Tracked Vehicle Systems describes the methodology and rationale used for developing an estimate for all or part of the life cycle cost of a tactical tracked vehicle weapon system. The model is intended for use by cost analysts. It reflects the current doctrine for Independent Parametric Cost Estimates. Updates of this document will be made periodically as revisions or additions to the methodology require. The data base which supports the variables shown in the various equations throughout the model is published separately. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 101 14/1 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSThe Air Force Cost Estimating Process:  
The Agencies Involved and Estimating  
Techniques Used. (U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 77 143P Lewis, Edwin M. ; Pearson,  
Eugene D. ;  
REPT. NO. AFIT-LSSR-5-77A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Weapon systems,  
\*Air Force procurement, Logistics management,  
Methodology, Costs, Growth(General),  
Department of Defense, Literature surveys,  
Theses (U)

The Department of Defense is faced with the task of acquiring new weapon systems. These acquisitions have been characterized by a history of cost growth, while disparities exist among the cost estimates that are made by different organizations. The AF Business Research Management Center believes that few individuals have an overall, detailed perception of how the various cost estimates interrelate and this belief was substantiated by the research. An extensive literature review was accomplished. A model of the Cost Estimating Process as it appears in published sources was developed, including specific estimating techniques used. Four factors were identified which need attention if the accuracy of estimates is to be improved: (1) a standardized definition of 'accuracy'; (2) a feedback system tailored to the individual estimator; (3) a compendium of cost estimating techniques; (4) a standardized data base identifying the estimator, project, techniques used, and time frame of the cost estimate. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 099 5/1 5/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

Analysis of the Cost Center Performance Measurement System.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 77 136P Covell, Philip A.; Jones,

Finch M., Jr;

REPT. NO. AFIT-LSSR-2-77A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Management planning and control, \*Cost effectiveness, Military organizations, Decision making, Supervisors, Accounting, Feedback, Finance, Resources, Allocations, Questionnaires, Factor analysis, Sampling, Theses

(U)

The Air Force Cost Center Performance Measurement System (CCPMS) was implemented to provide a means for measuring the productivity of cost centers. Before all commands could fully implement the program, the Air Force made the CCPS report, the heart of the CCPMS, optional and eventually cancelled the CCPMS. This research was to determine the extent that major commands discontinued use of the CCPS when made optional, to determine if some managers did not find the CCPS useful, and to determine if some managers used the CCPS for decision making. The researchers found that the majority of major commands were apparently undermotivated towards the CCPMS and dropped the optional CCPS. From the analysis of cost center manager questionnaires, the researchers concluded that cost center managers found the CCPS to be not useful because it was not meaningful at their responsibility level, the output measures (for most cost centers) were not useful descriptors of output, and many managers received other more useful reports that contained the same information. The researchers recommend that a new output measurement program be established to meet the individual needs of cost centers, reflect the actual cost center's productivity and only feedback information concerning controllable costs. (Author)

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AD-A044 099

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 083 14/1 21/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

An Identification and Characterization of Cost Models/Techniques used by the Air Force Logistics Command to Estimate Jet Engine Operation and Support Costs.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 77 189P Davidson, George H. ;

Griffiths, Raymond E. ;

REPT. NO. AFIT-LSSR-01-77A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Jet engines, \*Cost models, Logistics management, Decision making, Cost estimates, Air Force operations, Budgets, Development tests, Test and evaluation, Production, Logistics support, Military requirements, Theses

(U)

IDENTIFIERS: Design

(U)

The Life Cycle Cost (LCC) for jet engines includes the cost of design and development, test and evaluation, production, operation and support, and where applicable, disposal. Although only a small portion of the total LCC is incurred prior to production, the decisions made up to that point determine most of the total engine LCC. It is during this early design phase that there is insufficient operational information on the new engine to permit prediction of costs incurred during the operation and support phase of LCC. Estimation of LCC is further hindered by the absence of knowledge about techniques which could be used during engine design. This research involved a systematic investigation of the models and techniques used by the Air Force Logistics Command to estimate jet engine operation and support cost. These models and techniques are used in the areas of requirements determination for recoverable spares, engine overhaul, and total annual support-cost estimates for recoverable items. They are characterized to allow a determination as to their applicability for use during engine design. (Author)

(U)

AD-A044 083

UNCLASSIFIED

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 082 21/5 5/3 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOO. OF  
SYSTEMS AND LOGISTICSAn Analysis of Information Sources for the  
Estimation of Life Cycle Operating and  
Maintenance Costs of Turbine Engines.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 77 168P Baker, Michael D. ; Johnston,

Bruce B. ;

REPT. NO. AFIT-SLSR-11-77A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft engines, \*Life cycle costs,  
\*Costs, \*Turbojet engines, \*Turbofan engines,  
Logistics management, Work measurement,  
Maintenance, Logistics support, Inventory control,  
Ground support, Management planning and control

(U)

This study is an attempt to locate, analyze and evaluate data bases which contain operation and support (O and S) cost data for aircraft engines. The search for these data bases was primarily conducted at Headquarters, Air Force Logistics Command. The study focused upon the Increase Reliability of Systems (IROS) data base, the H036B DOD Cost and Production Report, the AFM 400-1 actuarial data system, the cost and planning factors in AFR 173-10, aerospace ground equipment data located in the Tables of Allowance, and Component Improvement Program data located at the Deputy for Propulsion, Aeronautical Systems Division. The study of these data bases led to the conclusion that data bases in the Air Force are not well designed for cost data collection and that many data bases are necessary to obtain the total operation and support cost of an aircraft engine. (Author)

(U)

AD-A044 082

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 046 1/3 14/1

BOEING AEROSPACE CO SEATTLE WA LOGISTICS SUPPOR AND  
SERVICESLife Cycle Cost of C-130E weapon  
System.

(U)

DESCRIPTIVE NOTE: Interim rept. 29 Jun 76-3 Jun 77.

JUL 77 69P Brown, Frank D. ; Walker,

Gary A. ; Wilson, David H. ; Dieterly, Duncan

L. ;

CONTRACT: F33615-76-C-0052

PROJ: 1959

TASK: 00

MONITOR: AFHRL TR-77-4G

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Transport aircraft, Life cycle costs,  
Cost models, Cost estimates, Human resources,  
Materials, Cost analysis, Data acquisition, Air  
Force procurement, Air Force research, Resource  
management, Research management, Air Force  
operations, Operations research

(U)

IDENTIFIERS: \*C-130 Aircraft, C-130E Aircraft,  
HUAFHRL15590701, PE63751F

(U)

Human and material resource data accumulated from all available Air Force sources is used to calculate the approximate life cycle cost (LCC) of the C-130E Hercules aircraft. The data was located, collected and reduced to computer files under another phase of the study, The Air Force Cost Analysis and Cost Estimating (CARE) model was modified and used to calculate the C-130E LCC. Based on fifteen years of Air Force data (1962-1976) a LCC estimate was calculated. The methodology for determining the historical LCC may be applied to other systems. The primary difficulty in computing historical LCC estimates is the lack of required data files and the low quality control on many data variables. This research provides a methodology and a guide for accomplishing historical LCC on other weapon systems. The reason for determining historical LCC is to establish a baseline that can be applied to new weapon system development programs to identify possible areas for reduction to reduce future weapon system LCC.

(U)

AD-A044 046

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 037 1/3 14/1

GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

Weapon System Costing Methodology Improved  
Structural Cost Analysis.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 75-Feb 77.

MAY 77 281P Kenyon, R. E. ;

CONTRACT: F33615-75-C-3148

PROJ: 1368

TASK: 05

MONITOR: AFFDL TR-77-24

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.

DESCRIPTORS: \*Airframes, \*Cost estimates, \*Cost  
analysis, Weapon systems, Methodology, Costs,  
Production, Rates, Computerized simulation,  
Computer programs, Wing boxes, Bomber aircraft,  
Aircraft, Metals, Alloys

IDENTIFIERS: Design to Cost, Commonality.

Scrappage, PE62201F, AFFDL13680505

(U)

(U)

This report describes a study to improve a previously developed weapon system costing methodology for aircraft airframes and basic structures under Contract F33615-72-C-2083. The methodology is part of a preliminary design level technique for the cost estimation flight vehicle structures. Applications of the method have indicated a number of areas where further study and development could be expected to provide an advanced state-of-the-art capability. This study was directed towards that end. The study was limited to the specific changes consisting of (1) development of complexity factors for technologies and materials represented by the advanced strategic bomber wing carry-through box, (2) modification of raw material cost estimating relationships (CERs) to increase sensitivity to material product form and type of scrappage, (3) investigation of additional assembly techniques and adding or modifying corresponding cost estimating factors, (4) modification of existing CERs to include evaluation of variations in the degree of commonality involved, (5) determination of the effect of production rate on recurring production costs.

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AD-A044 037

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 034 9/5 20/12 17/2.1

RAYTHEON CO WALTHAM MASS RESEARCH DIV

Cost-Effective GaAs Read IMPACT  
Transmitters.

(U)

DESCRIPTIVE NOTE: Scientific rept. no. 1. 29 Mar-29  
Sep 76.

MAY 77 97P Wallace, R. N. ;

REPT. NO. S-2166

CONTRACT: F30602-76-0143

PROJ: 4600

TASK: 18

MONITOR: RADC TR-77-178

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Impatt diodes, \*Radio transmitters,  
\*Microwave equipment, \*Power amplifiers, Gallium  
arsenides, Cost effectiveness, Strip transmission  
lines, Epitaxial growth, Semiconductor devices, C  
Band, Frequency modulation, Data links, Hybrid  
circuits

(U)

IDENTIFIERS: Read diodes, PE62702F.

RADC46001803

(U)

The objective of this program is to develop a low-cost 5-GHz 40-W FM CW transmitter, using GaAs Read IMPATT diodes as RF power-generating elements, suitable for data-link applications. Results of work so far indicate that the RF performance goals for the transmitter can be achieved, but that size, weight, and primary power consumption goals will be exceeded. We have designed a transmitter system that separates the unit into four main subassemblies: a VCO-driver, a multidiode output stage, a multichannel current regulator, and a DC-to-DC inverter. The VCO-driver, producing 3.3-W output at 5 GHz, has been assembled and tested. Epitaxial wafers for the high-power GaAs Read diodes to be used in the output stage have been successfully grown. The best diode result obtained so far is 21-W CW output at 4.86 GHz with 29.5 percent efficiency, and five of six wafers processed have produced 15-W diodes. The diodes permit a four-diode output stage. Six monthly shipments of six diodes representative of those to be used in the output stage have been made to RADC.

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AD-A044 034

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A044 029 5/9 14/1

TRAINING ANALYSIS AND EVALUATION GROUP (NAVY) ORLANDO  
FLA

Academic Attrition from Navy Technical  
Training Class 'A' School Courses. (U)

DESCRIPTIVE NOTE: Final rept. Nov 76-Jun 77,  
JUL 77 56P Middleton, Morris G. ; Rankin,  
William C. ; Green, Eric K. ; Papetti, Clarence  
J. ;  
REPT. NO. TAEG-47

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval training, \*Attrition, \*Cost  
analysis, Naval personnel, Enlisted personnel,  
Courses (Education), Trainees, Correlation  
techniques (U)

Attrition of enlisted personnel during first tour  
enlistment has become a major area of concern in the  
all-volunteer U.S. Navy. Attrition from the  
'A' school training environment was perceived to be  
a part of the overall attrition problem. This study  
investigated 147 A1 and A3 Navy courses to:  
identify factors associated with academic attrition;  
identify the extent and pattern of attrition in these  
courses; and determine the overall and specific cost  
of academic and nonacademic attrition. Extensive  
data are provided on over 20 variables. Major  
variables are academic attrition, nonacademic  
attrition, qualified inputs, unqualified inputs, and  
cost per equivalent graduate. (U)

AD-A044 029

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A043 836 1/5 14/1

FEDERAL AVIATION ADMINISTRATION WASHINGTON D C OFFICE OF  
AVIATION SYSTEM PLANS

Remoteness-Compensation Methodology for  
Benefit/Cost Establishment and Discontinuance  
Criteria. (U)

DESCRIPTIVE NOTE: Final rept.,  
JAN 77 57P Loughlin, Richard M. ;  
REPT. NO. FAA-ASP-76-7

UNCLASSIFIED REPORT

DESCRIPTORS: \*Terminal flight facilities, \*Air  
traffic control systems, \*Remote areas, \*Cost  
benefits, Air transportation, Remote systems,  
Remote terminals, Facilities, Construction,  
Costs, Installation, Housing (Dwellings),  
Alaska, Methodology, Compensation  
IDENTIFIERS: Airway Planning Standard Number  
1 (U)

This report develops a procedure for adjusting the  
benefit/cost (B/C) ratios by which proposals for  
FAA terminal facilities in remote locations are  
evaluated. The procedure is applicable to the types  
of installations for which B/C analyses, based on  
nationwide average data, are incorporated in Airway  
Planning Standard Number One (FAA Order  
7031.28). Without such an adjustment, proposals  
for facilities in Alaska and other such locations  
could not realistically be compared with those for  
facilities in the contiguous 48 States (CONUS).  
The compensatory methodology first adjusts  
construction and installation costs according to a  
geographically differentiated index. Staff housing  
cost is subtracted. Exceptional site-preparation  
and other cost elements are not discarded, but their  
cost is made equivalent to the cost of doing the same  
work at a corresponding CONUS site. Next, for  
facilities to serve remote communities shown to be  
exceptionally reliant on air transportation, the  
ascribed benefits are adjusted upward. This benefit  
enhancement is proportional to the communities'  
aviation-dependency as determined by the model  
contained in this report, but it is not permitted to  
more than double intrinsic benefits. (U)

AD-A043 836

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A043 834 5/9 14/1

AIR TRAINING COMMAND RANDOLPH AFB TEX DIRECTOR OF OPERATIONS ANALYSIS

The TPR Process and Impact of Fluctuations.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUL 76 54P Petrick, George S. ;  
REPT. NO. 76-4

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force training. \*Cost analysis.  
\*Recruits. \*Air Force personnel. Military  
requirements. Enlisted personnel. Instructors  
IDENTIFIERS: Fluctuations. Trained personnel  
requirements

(U)

(U)

The objectives were: (1) determine the cost of trained personnel requirements (TPR) fluctuations; (2) identify authorization tolerances with which the MAJCOMS could live; (3) identify areas of responsibility in the TPR environment; and (4) propose solutions that would enable Air Force and ATC to reduce TPR turbulence. The principal cost of TPR turbulence is associated with technical training enlisted instructors. Additional costs, in the form of loss of investment, are incurred when training has been rendered but is no longer needed. Costs associated with base operating support and contract services are considered negligible when compared with instructor turbulence costs. Total dollar cost attributed to TPR variations in FY 76 is about \$8.8 million. An additional cost in mission degradation associated with undermanning was found to be 262 man-years. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A043 360 5/1 14/1 5/3

CENTER FOR ECONOMIC ANALYSIS FAIRFAX VA

A Compilation of Methodological Problems Confronting the Air Force in the Fields of Economics and Management. Phase I.

(U)

DESCRIPTIVE NOTE: Interim scientific rept.,  
77 50P Bloch, Howard R. ; Marlin,  
James W. . Jr. ; Wiest, Philip R. ; Snavely,  
William P. ;

CONTRACT: AF-AFOSR-3168-77

PROJ: 2313

TASK: A3

MONITOR: AFOSR TR-77-C992

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Economic Basic Research Problems.

DESCRIPTORS: \*Resource management. \*Cost effectiveness. \*Air Force research. \*Research management. Problem areas. Military requirements. Effectiveness. Assessment. Standards. Productivity. Work measurement. Motivation. Personnel management. Weapon system effectiveness. Operational effectiveness. Cost estimates. Management planning and control. Economic analysis. Air Force planning. Decision making. Allocations

(U)

IDENTIFIERS: \*Measures of effectiveness.

Priorities. XAFOSR2313A3. PE61102F

(U)

Interviews were conducted with Air Force decision-makers and analysts of all ranks and from all levels of organization. The purpose was to ascertain the basic research needs of the Air Force in the fields of economics and management. Over one hundred separate research requirements were identified. The gaps in knowledge which were most often mentioned were in measurement output so as to determine effectiveness of programs, in measuring costs, in determining the most effective management techniques and motivations, in determining proper variables on which to make projections, and in selecting criteria by which to judge programs. A number of questions posed appear answerable by the research community. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A043 265 1/3 9/3 14/1

RAND CORP SANTA MONICA CALIF

Avionics Data for Cost Estimating.

(U)

MAR 77 20P Armstrong, Bruce E. ;  
REPT. NO. P-5745-1

## UNCLASSIFIED REPORT

Availability: Microfilm copies only.  
SUPPLEMENTARY NOTE: Presented at DoD Cost Analysis  
Symposium (1976) Held in Airlie, Va., on 14-17  
Nov 76.DESCRIPTORS: \*Avionics, \*Cost estimates, \*Tactical  
aircraft, \*Electronic equipment, Data bases,  
Technology, Costs, Electronics, Data  
acquisition, Department of Defense  
IDENTIFIERS: AN type equipment

(U)

(U)

Avionics cost has been a continuing problem to the defense cost analyst. The various services and the Office of the Secretary of Defense (OSD) have sponsored numerous avionics data collection efforts, as well as funding various companies to develop cost models and cost estimating relationships. To mention a few, both the Air Force and the Navy, and research firms such as General Research Corporation (GRC), Research Management Corporation (RMC), and Institute for Defense Analyses (IDA), have all been involved at one time or another with efforts to develop the avionics cost estimation methods and a supporting data bank. The reason for this level of effort is that the costs of avionics account for nearly 30 percent of the total costs of fighter aircraft and a significant amount in most other aircraft types. Yet, because of rapid technological change, typically small production runs, and poor historical cost information, reliable prediction of avionics costs has been impeded. This paper discusses a recent Rand study sponsored by OSD/Director of Planning and Evaluation (DP and E) which had the objective of creating an avionics data base for tactical aircraft.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A043 034 14/1 15/5 5/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

Logistic Support Cost Commitments for Life  
Cycle Cost Reduction.

(U)

JUN 77 45P Collins, Dwight E. ;  
REPT. NO. LY1-75-1/5  
CONTRACT: SD-321

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Cost analysis,  
\*Logistics management, Reduction, Design to cost,  
Logistics support, Weapon systems, Department of  
Defense, Cost models, Uncertainty, Assessment,  
Risk analysis, Statistical analysis, Reliability,  
Maintainability, Test methods

(U)

In its efforts of recent years to reverse the trend of increasing operating and support (O and S) costs of weapon systems and equipment, the Department of Defense (DoD) has begun to use several new contracting techniques to transmit Government cost reduction goals to the Contractor during equipment development and production. One of these techniques is the Logistic Support Cost (LSC) Commitment. The LSC Commitment has three primary elements: (1) a target logistic support cost (TLSC) defined in terms of a cost model framework, (2) a field verification test procedure, and (3) a contract remedy or price adjustment based on verification test results. This report summarizes results of a recent study which investigates the incentives conveyed by the LSC Commitment and the risks accompanying its implementation. It focuses particularly on the impact of statistical risk on the interpretation of verification test results, and presents guidance for structuring future LSC Commitments.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 938 5/1

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Special Termination Costs Clause. ASPR 8-712.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
MAY 77 30P Vachon, Raymond F. :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost effectiveness. \*Contract administration. Management planning and control. Military budgets. Law(Jurisprudence). Military procurement. Regulations

IDENTIFIERS: \*Termination costs

(U)

(U)

The purpose of this study project is to assist Program Managers and/or other interested persons in becoming familiar with the use of the Special Termination Costs Clause as stated in paragraph 8-712 of the Armed Services Procurement Regulation. Much of the material contained in the report was obtained by interviewing knowledgeable persons who have worked with the clause and by reading numerous reports and other documentation on the subject matter. The clause has been used in contracts only to a limited extent by the Services, primarily the Air Force. The major obstacles to increased use of the clause appear to be the small number of contracts which meet the required dollar criteria as stated in the ASPR and the possibility of violating the Anti-Deficiency Act if funds are not available to pay termination costs. The opinion of most agencies working with the clause, is that it is not necessary to have the funds cited in the clause prior to the determination to terminate the contract for the convenience of the Government. The report recommends that Program Managers make maximum use of the special termination Costs Clause when appropriate. If used, the supporting budget office should be informed of the potential liabilities over and above the dollars obligated:

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 935 14/1 5/1

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Using Cost Analysis to Break the Overrun Habit.

(U)

DESCRIPTIVE NOTE: Stud, project rept.,  
MAY 77 100P Grimm, Richard William :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis. \*Cost overruns. \*Contract administration. Systems management. Parametric analysis. Problem areas. Control. Growth(General). Cost estimates. Error analysis

(U)

This report is a treatise on cost analysis and cost management intended primarily to orient personnel unfamiliar with them. Major factors contributing to program cost problems are highlighted. The results of several studies on cost growth are portrayed, and several recommendations are made for controlling cost. Cost analysis responsibilities and methodology are presented in detail and examples are used. Parametric methodology is emphasized heavily as this is the government's primary technique. Analytical and institutional problems are discussed and on-going research to solve them is described. The report closes with a discussion of how the program director and cost analysts can work together to help break the overrun habit.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 933 15/5 14/1 12/2

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Initial Operational Support: An  
Alternate Approach.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
APR 77 43P Smith, John L. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Army procurement,  
\*Cost analysis, Logistics management, Logistics  
support, Maintenance management, Maintainability,  
Reliability, Life cycle costs, Aircraft  
maintenance, Cost effectiveness, Contract  
administration

IDENTIFIERS: Program management

(U)

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The purpose of the project was to provide a  
rationale for reevaluating the manner in which weapon  
systems are introduced into the operational  
inventory. An alternative approach to this is then  
proposed. The suggested alternative was based on  
the author's experience in fielding three systems in  
two separate programs from a position within the  
acquisition organization. Facts, assumption, and  
conclusions necessary to support the proposed  
alternative are documented by reference to separate,  
independent research sources. The resulting  
approach is an amalgam from the programs worked  
directly by the author and the experience of  
associates in similar endeavors. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 904 5/9 5/1

ARMY CONCEPTS ANALYSIS AGENCY BETHESDA MD

Cost Effectiveness Analysis of Bonuses and  
Reenlistment Policies (CEABREP).

(U)

DESCRIPTIVE NOTE: Final rept.,  
AUG 77 203P Anderson, Calvin M. ; Holtry,  
Anthony K. ; Plourde, Rene ;  
REPT. NO. CAA-SR-77-10

UNCLASSIFIED REPORT

DESCRIPTORS: \*Reenlistment, \*Computerized  
simulation, \*Personnel retention, \*Cost analysis,  
Army personnel, Manpower, Specialists, Trade off  
analyses, Personnel management, Policies, Decision  
making, Allocations, Military force levels,  
Forecasting, Motivation, Demography, Money,  
Army planning, Cost effectiveness, Mathematical  
prediction, peacetime, Flow charting

(U)

IDENTIFIERS: \*Bonuses, \*Military occupational  
specialties

(U)

To manage the bonus program effectively, the Army  
must first accurately predict personnel imbalances by  
Military Occupational Specialty (MOS) and  
then estimate the bonus level and/or policy decisions  
which would be necessary to alleviate potential  
disparities. The CEABREP study addresses both the  
force projection process and the factors influencing  
reenlistment behavior. The report consists of six  
chapters supported by technical appendices. Chapter  
1 provides introductory material and background.  
The methodology formulated to analyze the  
reenlistment environment is the subject of Chapter  
2. MOS-unique continuation rates which were  
developed to improve the accuracy of force  
projections are discussed in Chapter 3. An  
analysis of retention factors is in Chapter 4 and  
alternatives to bonuses are identified in Chapter  
5. The final chapter of this report presents the  
major observations. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 795 6/5 5/10 14/1

PRESEARCH INC ARLINGTON VA

Summary of Cost-Benefit Study Results for  
Navy Alcoholism Rehabilitation Programs.

(U)

DESCRIPTIVE NOTE: Final rept..

JUL 77 41- Borthwick, R. B. ;

REPT. NO. PI-TR-346

CONTRACT: N00123-77-C-0910

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Rehabilitation. \*Alcoholism. \*Cost  
benefits. Personnel management. Policies. Economic  
analysis. Naval personnel. Marine Corps personnel.  
Replacement. Drug abuse. Personnel retention.  
Careers. Therapy. Effectiveness. Residential  
section. Health care facilities. Naval shore  
facilities

(U)

This report summarizes the results of the cost-  
benefit studies carried out for the Department of  
the Navy's (DoN) Alcoholism Prevention  
Program (NAPP). This work focuses on the  
effects of the resident treatment programs on  
replacement, hospitalization, accidents,  
jurisprudence and productivity aspects of Navy and  
Marine Corps operations. Aggregated economic  
costs and losses due to alcohol abuse in the DoN  
are estimated and presented. The report concludes  
that the existing resident treatment effort for  
alcoholics is highly cost effective and in the best  
interests of the Navy and Marine Corps.  
Further, the annual economic losses to the DoN  
are of such magnitude that continued efforts toward  
alcoholism prevention and earlier identification of  
alcoholics are warranted. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 780 5/1

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

The Impact of Independent Cost Analyses on  
DDC Acquisition Management.

(U)

DESCRIPTIVE NOTE: Study project rept..

MAY 77 45P Kriebel, John Eugene . Jr.

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis. \*Management planning  
and control. Acquisition. Cost estimates. Defense  
planning. Decision making. Military budgets.  
Inflation(Economics)

(U)

The purpose of this study was to review the impact  
of the DOD policy requiring Independent Cost  
Analyses (ICA). The study consisted of  
interviews with selected acquisition and cost  
analysis managers as well as a review of the current  
literature, including US General Accounting  
Office reports. Increased system costs have been  
attributed to poor cost estimating. Since the  
inception of ICAs, cost growth has been reduced.  
This reduction would seem to result from the  
increased emphasis on cost estimates directly related  
to the high visibility given to the ICA. The  
study concludes the program manager can use the ICA  
to offset stresses inimical to his program, and  
notwithstanding the continued need for better  
estimating, major improvements in cost control will  
now have to come from other areas of management.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 777 15/3 15/5 5/1 14/1  
15/7

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Acquiring Affordable Weapons Systems.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
MAY 77 87P Singer, Robert A. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Defense systems, \*Weapon systems,  
\*Systems management, \*Military planning,  
\*Logistics planning, \*Cost analysis, \*Cost models,  
Life cycle costs, Reliability, Military  
procurement, Maintainability, Acquisition,  
Manpower, Data bases  
IDENTIFIERS: Systems acquisition, Program  
management, Affordable weapon systems,  
VA:OSCI(Visibility and Management of Support  
Costs), Visibility and management of support  
costs

(U)

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This project attempts to examine the approaches being taken to reduce the O and S cost implications of systems being acquired, and to examine the potential effectiveness of these approaches. The project was conducted by interviewing key people within OSD and the Services currently participating in outyear cost management, by researching recent available literature on the subject, and by integrating the results into a capsule summary and evaluation of current activities. A series of efforts are ongoing. New draft management directives have been prepared in OSD and the Services aimed at infusing affordability considerations more heavily throughout the acquisition process. O and S cost data banks are being constructed by the Services to provide weapon system and subsystem cost visibility. Innovative procurement procedures and affordability management techniques are being used successfully on some new system acquisitions. Considerably more effort is required before more affordable weapons systems become reality. This includes integration and increasing responsiveness of diverse organizational units, improvements in cost estimation, building of a suitably detailed cost data base, and consideration of logistics support,

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 771 5/9 14/1 5/1

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Training Package: Foreign Military Sales  
(FMS) Agreements (Planning and Costing).

(U)

DESCRIPTIVE NOTE: Study project rept.,  
MAY 77 68P Davis, William E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Management, Training, \*Military  
procurement, \*Cost estimates, Army training, Cost  
analysis, Curriculum, Systems analysis, Systems  
management, Weapon systems, Acquisition, Military  
forces(Foreign), Costs, Reports, Management,  
planning and control  
IDENTIFIERS: \*Training management, Program  
management, Foreign military sales

(U)

(U)

The purpose of this paper is to analyze Training and Doctrine Command (TRADOC) curriculum development directives and DOD directives related to systems acquisition. The author seeks to show the similarities of the procedures and processes used in each, and to indicate how more accurate training cost estimates are possible through thorough training requirement analysis. The study identifies documents that are related to cost reporting which can be used in conjunction with the curriculum development directives to provide a valid basis for more accurate cost estimating where training costs must be included in a package type Foreign Military Sales (FMS) case. The study takes advantage of the author's experience, gained in an on-going program, to show how pitfalls may be avoided, where advanced planning must be accomplished, and required funds, facilities, equipment, personnel, and other training related items projected. A brief planning model is provided. Also included are sample forms which will be useful in doing the training analysis, formulating the overall training plan, and organizing it in a manner which makes the cost track easier to follow.

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AD-A042 771

UNCLASSIFIED

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A042 628 13/3 14/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILL

Corrosion Costs of Air Force and Army  
Facilities and Construction of a Cost  
Prediction Model.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jul 75-30 Oct 76,  
JUL 77 71P Hahn, Christopher ;  
REPT. NO. CERL-TR-M-224  
PROJ: 4A762719AT41  
TASK: T7  
MONITOR: AFCEC TR-77-17

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Construction materials, \*Corrosion,  
\*Cost analysis, Mathematical models, Air Force  
facilities, Army, Military facilities, Soils,  
Costs, Construction, Electrical conductivity,  
Air pollution, Energy consumption, Climate,  
Topography, Predictions, Water pollution  
IDENTIFIERS: WU001, AST41, PE62719A

(U)

(U)

The facility maintenance organizations of several  
Air force and Army installations were analyzed  
to determine the percentage of their direct  
maintenance, repair or replacement efforts that were  
corrosion-related. Also included were the costs of  
designing and inspecting corrosion-related  
construction projects. This raw data was processed  
and correlated with climatological, geographic and  
environmental statistics to develop a predictive  
corrosion cost model. The resulting empirical  
equations are able to predict facility corrosion  
costs and classification with reasonable accuracy, as  
a function of installation dimensions and capacities,  
and readily obtainable weather, soil and air quality  
data. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A042 460 5/1 14/1 5/3 9/2

RAND CORP SANTA MONICA CALIF

Introduction to the USAF Total Force Cost  
Model.

(U)

DESCRIPTIVE NOTE: Interim rept.  
JUN 77 68P Vassey, H. G. ;  
REPT. NO. R-2098-AF  
CONTRACT: F49620-77-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force budgets, \*Cost estimates,  
\*Air Force operations, \*Air Force planning,  
\*Economic models, Computerized simulation,  
Forecasting, Systems analysis, Advanced systems,  
Manpower, Air Force procurement

(U)

IDENTIFIERS: Total force cost model, Military  
force structure

(U)

Designed to produce time-phased total manpower and  
dollar requirements estimates for 15-year projections  
of alternative future USAF forces and support  
structures, the USAF Total Force Cost  
Model--sometimes referred to as the FORCE model--  
is currently operating on computers in the Air  
Staff Cost and Economic Analysis Division,  
Directorate of Management Analysis,  
Comptroller of the Air Force. This report  
presents an overview of the model, including its  
basic purposes and its relationship to the planning  
and programming process. Some examples and  
suggested applications are presented. Only the  
general features of the model and the methodology it  
employs are discussed. The FORCE model has  
potential for application in analysis of future  
forces for research and development planning; studies  
of alternative weapon systems for mission-oriented  
subsets of the force; and analysis of alternative  
future basing plans, training structure, or other  
support issues. (Author)

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AD-A042 460

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 405 5/1 9/2

NAVAL SURFACE WEAPONS CENTER DAHLGREN LAB VA

Computer Model for Life Cycle Costing.  
User's Guide.

(U)

DESCRIPTIVE NOTE: Technical rept.,

MAY 77 52P McLaughlin, Wayne :

REPT. NO. NSWC/DL-IR-3645

MONIT. : GIDEP, GIDEP 5076-0153, 195.20.00.00-W4-03

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Mathematical models, Computer programs, FORTRAN, Weapon systems, Acquisition, Cost analysis, Algorithms, Data processing

IDENTIFIERS: Interactive systems

(U)

(U)

This report provides instructions for operating the computer program which models life cycle costs for equipment acquisitions. The program, written in the Fortran IV Extended programming language, was implemented on the CDC 6700 computer under the SCOPE 3.4 operating system at the Naval Surface Weapons Center, Dahlgren, Virginia, in January, 1977. Designed for use from an intercom terminal in an interactive manner, the model has a wide variety of built in capabilities which can greatly facilitate the task of performing life cycle cost analysis. A detailed discussion concerning the use of each feature is presented. This is then expanded into an overall description of the program's operating sequence, to aid the potential user in ascertaining if the model can be used to meet his specific needs. The remainder of the report is devoted to the actual operation of the program. Execution involves the sequential display of requests by the terminal for input, followed by responses typed by the operator. Thorough coverage is given to the choices available to the user in each situation, including examples of input and output. (Author)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 385 21/4 14/1 13/8

BECHTEL CORP SAN FRANCISCO CALIF

Coal Gasification Study Handbook.

(U)

DESCRIPTIVE NOTE: Final rept.

APR 77 103P

CONTRACT: N68305-76-C-0009

PROJ: F57571

TASK: ZF575710C

MONITOR: CEL CR-77.014

UNCLASSIFIED REPORT

Availability: Microfiche copies only.

SUPPLEMENTARY NOTE: See also Rept. no. CEL-CR-77.013, AD-A041 860.

DESCRIPTORS: \*Coal, \*Coal gas, \*Pollution abatement, \*Gas generating systems, \*Cost analysis, Emission, Boilers, Sulfur, Handbooks

IDENTIFIERS: \*Coal gasification, Fuel gas, WU01015, PE62765N

(U)

(U)

The purpose of this handbook is to provide: first, a procedure for evaluating the costs of a coal gasification plant in terms of the capital investment and operating costs. These are to be sensitive to several parameters defining coal, fuel gas, and sulfur emissions; second, a procedure for the derating of Navy base boilers, to reflect the change in performance resulting from introduction of fuel gas in place of coal or oil. The gas plant analysis is based in part on a detailed analysis of the gas treatment section of the plant. The remaining part of the plant performance is based on conventional stoichiometry and near approach to equilibrium in the gas production section. The boiler derating method is based on observations of the relative contribution to heat transfer made by radiation and convection, and on conventional relations describing these transfer processes. (Author)

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AD-A042 405

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 314 14/1 9/2 12/1

OFFICE OF THE PROJECT MANAGER SELECTED AMMUNITION DOVER NJ

A Computer Program for Tracking Cost/  
Schedule Control Systems Criteria.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUN 77 98P Smith, Louis M. ;

REPT. NO. PMSA-2-5

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.

DESCRIPTORS: \*Cost models, \*Scheduling, \*Control  
systems, \*Computer programs, Mathematical models,  
Digital computers, Contract administration, Change  
detection, Tracking, FORTRAN

(U)

IDENTIFIERS: Cost control, Schedule control,  
CDC-6500 computers, CDC-6600 computers

(U)

Report describes a computer program that provides a  
means for tracking contractor's performance where  
Cost/Schedule Control Systems Criteria are  
utilized. The program was specifically designed for  
the CDC 6500/6600 computer at USA Armament  
Research and Development Command, Dover.Input data are those normally found in a  
contractor's Cost Performance Report. Program  
output is a series of Cost and Schedule  
Performance Index graphs, a summary variance  
graph, and a set of tables. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 264 9/2 14/1 5/3

DQTY ASSOCIATES INC ROCKVILLE MD

Software Cost Estimation Study. Volume I.  
Study Results.

(U)

DESCRIPTIVE NOTE: Final technical rept. 23 Feb 76-23  
Feb 77.

JUN 77 212P Herd, James H. ; Postak, John

N. ; Russell, William E. ; Stewart, Kenneth R. ;

REPT. NO. TR-151-vol-1

CONTRACT: F30602-76-C-0182

PROJ: 5581

TASK: 14

MONITOR: RADC TR-77-220-vol-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programs, \*Cost estimates,  
\*Cost models, Control, Cost analysis, Command  
and control systems, Business, Scientific research,  
Data reduction, Reliability, Development tests,  
Adverse Conditions, Impact

(U)

IDENTIFIERS: WURADC55811404, PE62702F

(U)

The study identified factors that have an adverse  
effect on software cost estimates. Determined their  
impact on software cost estimates. Discussed methods  
for controlling the effect of these factors, and  
developed an overall methodology for estimating the  
costs of software development. In addition to a  
generalized model for estimating software development  
costs, separate models have been generated for  
estimating the development cost of command and  
control, scientific, utility, and business software.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 167 8/8 5/1 14/1

KCM-WRE/YTO SEATTLE WASH

Environmental Planning for the Metropolitan  
Area Cedar-Green River Basins.  
Washington. Part II. Urban Drainage  
Study. Appendix A. Regional Sub-Basin  
Plans. Volume 2. Green River Basin.

(U)

DEC 74 381P

CONTRACT: DACW67-73-C-0022

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.

SUPPLEMENTARY NOTE: See also Part 2, Appendix C.  
AD-A042 168. Original contains color plates. All  
DDC reproductions will be in black and white.

DESCRIPTORS: \*Drainage, \*Basins(Geographic),  
\*Urban planning, \*Cost analysis, Runoff, Flood  
control, Maintenance, Investment expenditures,  
Rivers, Puget Sound, Washington(State)

(U)

The Urban Runoff and Basin Drainage  
Report presents a comprehensive plan for meeting  
the existing and long range urban drainage needs  
within the Green River Basin. The study  
recommendations address drainage facilities, capital  
cost, methods of financing and institutional  
arrangements for effective drainage management. The  
recommended plans are conceptual and are intended for  
use by local governments as a guide in the future  
planning of drainage systems.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 166 8/8 5/1 14/1

KCM-WRE/YTO SEATTLE WASH

Environmental Planning for the Metropolitan  
Area Cedar-Green River Basins.  
Washington. Part II. Urban Drainage  
Study. Appendix A. Regional Sub-Basin  
Plans. Volume 1. Cedar River Basin.

(U)

DEC 74 530P

CONTRACT: DACW67-73-C-0022

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.

SUPPLEMENTARY NOTE: See also Part 2, Appendix A.  
Volume 2, AD-A042 167. Original contains color  
plates. All DDC reproductions will be in black and  
white.

DESCRIPTORS: \*Drainage, \*Basins(Geographic),  
\*Urban planning, \*Cost analysis, Runoff, Flood  
control, Maintenance, Investment expenditures,  
Rivers, Puget Sound, Washington(State)

(U)

The Urban Runoff and Basin Drainage  
Report presents a comprehensive plan for meeting  
the existing and long range urban drainage needs  
within the Cedar River Basin. The study  
recommendations address drainage facilities, capital  
cost, methods of financing and institutional  
arrangements for effective drainage management. The  
recommended plans are conceptual and are intended for  
use by local governments as a guide in the future  
planning of drainage systems.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 134 1/3 14/1

BOEING VERTOL CO PHILADELPHIA PA

Product Improvement Program Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept. 17 May 76-17 Feb 77.

JUN 77 117P Slawitt, Stephen J. ;

REPT. NO. D210-11146-2

CONTRACT: DAAJ02-76-C-0020

PROJ: 1F262209AH76

TASK: '00

MONITOR: USAAMRDL TR-77-17

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft, \*Modification, \*Cost effectiveness, \*Operational effectiveness, Methodology, Aircraft maintenance, Reliability, Computer programs.

(U)

IDENTIFIERS: KU146EK, ASH76, PE62209A

(U)

This report presents the results of a study to develop an analysis technique for evaluating the cost and operational effectiveness of potential aircraft modifications that affect reliability and maintainability. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 937 8/6 13/2 14/1

ARMY ENGINEER DISTRICT OMAHA NEBR

Water and Related Land Resources Management Study. Volume V. Supporting Technical Reports Appendix. Annex K. Regional Water Supply. Appendix.

(U)

DESCRIPTIVE NOTE: Final rept.

JUN 75 444P

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Metropolitan Region of Omaha, Nebraska-Council Bluffs, Iowa. Review Report on the Missouri River and Tributaries. See also Volume 5, Annex L, AD-A041 955.

DESCRIPTORS: \*Water resources, \*Urban areas, \*Water supplies, \*Cost analysis, Municipalities, Planning, Operation, Legislation, Rivers, Nebraska, Iowa

(U)

IDENTIFIERS: \*Omaha(Nebraska), Council Bluffs(Iowa), Missouri River

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 935 8/6 13/2 14/1

ARMY ENGINEER DISTRICT OMAHA NEBR

Water and Related Land Resources Management Study. Volume V. Supporting Technical Reports Appendix. Annex H. Regional Wastewater Management.

(U)

JUN 75 246P

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, Annex J. A041 936. Original contains color plates: All DDC reproductions will be in black and white. Report on Metropolitan Region of Omaha, Nebraska-Council Bluffs, Iowa. Review Report on the Missouri River and Tributaries.

DESCRIPTORS: \*Water resources, \*Urban areas, \*Waste water, \*Waste management, \*Cost analysis, Facilities, Land use, Sewage treatment, Runoff, Water treatment, Municipalities, Wastes(Industrial), Rivers, Nebraska, Iowa

(U)

IDENTIFIERS: \*Omaha(Nebraska), Council Bluffs(Iowa), Missouri River

(U)

The objective of the wastewater management study is to develop wastewater systems for the area which will satisfy best the various needs in the Omaha-Council Bluffs region. The process of developing alternative plans for water resource management must consider many factors.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 933 8/6 5/1 14/1

ARMY ENGINEER DISTRICT OMAHA NEBR

Water and Related Land Resources Management Study. Volume V. Supporting Technical Reports Appendix. Annex F. Missouri Riverfront Corridor Land Use Plan and Program.

(U)

JUN 75 125P

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Metropolitan Region of Omaha, Nebraska-Council Bluffs, Iowa. Review Report on the Missouri River and Tributaries. See also Volume 5, Annex G. AD-A041 934. Original contains color plates: All DDC reproductions will be in black and white.

DESCRIPTORS: \*Water resources, \*Urban areas, \*Land use, \*Urban planning, \*Cost analysis, Economic analysis, Sociology, Recreation, Housing(Dwellings), Commerce, Transportation, Rivers, Nebraska, Iowa

(U)

IDENTIFIERS: \*Omaha(Nebraska), Council Bluffs(Iowa), Missouri River

(U)

This Land Use Plan and Program performs two functions: (1) describes the land uses which exist or have been planned for the 60 mile Missouri River corridor from Harrison County, Iowa to Cass County, Nebraska and; (2) it describes the capital improvements program and priorities: the tax benefits derived from public and private investments; a general evaluation of environmental, social and economic impacts; the possible application of the joint Funding Simplification Act of 1974; and the cooperative administration and program management of the projects which this composite development plan recommends.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 860 21/4 14/1

BECHTEL CORP SAN FRANCISCO CALIF

Coal Gasification Study.

(U)

DESCRIPTIVE NOTE: Final rept.

APR 77 111P

CONTRACT: N68305-76-C-0009

PROJ: F57571

TASK: ZF57571001

MONITOR: CEL CR-77.013

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Coal, \*Coal gas, \*Cost analysis, Naval shore facilities, Pollution abatement, Emission control, Costs, Economics, Fuels, Fuel oil, Comparison

IDENTIFIERS: Coal gasification, GASPLANT computer program, PE62765N

(U)

(U)

The general problem of providing fuel gas for Navy base facilities is studied. The intent is: first, to provide designs of a coal gasification plant producing 6x 10 to the 9th power Btu/day reactor output, based on two types of reactors; second, to conduct parametric studies leading to means for the costing of similar plants operating on different feedstocks; and third, to provide a method for estimating the change in boiler rating which must follow the substitution of fuel gas for either oil or coal firing. The performance and economics given are based on conceptual design methods. The economic results allow comparison of fuel-gas and fuel-oil costs on the basis of the Navy's method of analyzing costs using 'Economic Analysis Handbook,' NAVFAC P-442, 1975. The costs are the sum of all future outlays discounted to the present but allowing escalation at different rates for utilities and feedstock over a 25-year production period. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 798 9/2 14/1

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Interactive Computer Graphics: A Responsive Planning and Control Tool for DOD Program Management.

(U)

DESCRIPTIVE NOTE: Research rept..

JAN 77 56P

Callahan, Joseph E. :

Roberson, Carlton F. ; Perino, George H. , Jr. :

REPT. NO. DSVC-RR-77.1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Interactive graphics, \*Management planning and control, \*Executive routines, \*Cost analysis, Networks, Computer programs, Pert. Cathode ray tube screens, Display systems, Computer applications, Department of defense, State of the art, Feasibility studies

(U)

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IDENTIFIERS: \*Program management

This report summarizes the methodology, conduct and findings of the Defense Systems Management College (DSMC) research study of Interactive Computer Graphics (ICG) as a tool for program management planning and control. The study was conducted in four phases to meet four objectives: to determine the feasibility of representing and interrogating a program/project network on a graphics console; to determine the feasibility of developing an Interactive Computer Graphics Networking System (ICGNS) software prototype for program management planning and control; to examine the affordability of implementing an ICGNS in the PWD; and to assess the state-of-the-art in industry and DOD regarding existing and/or proposed ICG managerial applications.

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AD-A041 798

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 571 5/3 15/1

WEST VIRGINIA UNIV MORGANTOWN BUREAU OF BUSINESS  
RESEARCH

Guidelines for Attracting Private Capital to  
Corps of Engineers Projects.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAR 77 226P Graese, G. Richard ; Witt,  
Tom S. ; Rovelstad, James M. ;  
CONTRACT: DACW31-75-C-0077  
MONITOR: IWR CR-77-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Business, \*Cost effectiveness,  
\*Management, Finance, Problem areas, Army  
Corps of Engineers, Recreation, Cost analysis,  
Profits, Regression analysis, Computer  
applications

(U)

This report reflects a study of concessionary  
operations at several Corps lakes located across  
the United States. The essential problem was  
to discern the policy and procedural means by which  
additional private capital could be attracted to meet  
the needs of nearly 400 million visitors who use  
recreation facilities at Corps projects. The  
researchers found that Corps concessionaires are  
small businesses and suffer the problems of all small  
business, particularly with respect to management  
inexperience. They found no single factor which  
influences profitability. The report conclusions  
dispute many of the commonly held assumptions about  
the factors critical to profitability.  
(Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 526 14/1 5/3

DECISIONS AND DESIGNS INC MCLEAN VA

The Art of Cost-Benefit Analysis.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
FEB 77 59P Fischhoff, Baruch ;  
CONTRACT: N00014-76-C-0074, ARPA Order-3052

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with  
Decision Research Corp., Eugene Ore., Rept. no.  
DR-76-10 and Perceptronics, Inc., Woodland Hills,  
Calif., Rept. no. PTR-1042-77-2.

DESCRIPTORS: \*Cost benefits, \*Cost analysis  
Decision making, Acceptability, Value engineering,  
Trees, Judgment (Psychology), Probability,  
Toxic hazards, Nuclear energy, Earthquakes

(U)

Proposals for large-scale government and private  
projects are increasingly coming under the scrutiny  
of the cost-benefit analysis, decision analysis, risk  
assessment and related approaches. This paper  
presents a critical overview of such analyses. It  
discusses (1) their rationale; (2) their  
acceptability as guides to decision making; (3)  
the problems such analyses encounter; (4) how  
they may be misused; and (5) what steps are  
needed to increase their contribution to society.  
The discussion is illustrated with a variety of  
examples drawn, in particular, from the evaluation of  
new technologies.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 508 14/1 5/1 19/3

LOGISTICS MANAGEMENT INST WASHINGTON D C

Combat Vehicle System Operating and Support  
Costs: Guidelines for Analysis. (U)

JUN 77 96P Fiorello, Marco R. ; Jones,  
Lester G. , Jr;  
REPT. NO LWI-75-1/3  
CONTRACT: SD-321

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Life cycle costs,  
\*Combat vehicles, \*Military procurement, Cost  
analysis, Reports, Standardization, Costs,  
Logistics support, Comparison, Logistics planning,  
Defense planning, weapon systems, Acquisition,  
Management planning and control, Decision making (U)

The Department of Defense has placed new emphasis on examining the projected operating and support (O/S) costs of planned weapons and finding ways to reduce those costs. O/S cost analyses are now a major part of the cost review conducted at each weapon procurement decision meeting by the Defense Systems Acquisition Review Council (DSARC) and the DSARC's principal advisor on new system costs -- the Cost Analysis improvement Group (CAIG). This report recommends guidelines for preparing and presenting estimates of the support investment (SI) and O/S costs of combat vehicle systems to DSARC. It provides a framework for objective comparison of SI and O/S costs of program, design, or support alternatives, using consistent methodologies and terminology. A general methodology for SI and O/S cost-estimating is described, a standard cost element structure is defined, and specific requirements for presentation of SI and O/S cost estimates to DSARC are proposed. Standards for the presentation and documentation of those cost estimates are also recommended. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 497 11/4 14/1 9/2

NORTHROP CORP HAWTHORNE CALIF AIRCRAFT DIV

Advanced Composite Cost Estimating Manual.  
Volume II. (U)

DESCRIPTIVE NOTE: Final rept. 1 Apr 75-31 Mar 76.  
AUG 76 54P LeBlanc, Donald J. ;  
Lorenzana, J. ; Kokawa, A. ; Bettner, T. ; Timson,  
F. ;  
CONTRACT: F33615-75-C-3103  
PROJ: 1207  
MONITOR: AFFDL TR-76-87-Vol-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Composite materials, \*Cost estimates,  
\*Computer applications, Computer programs, Punched  
cards, Airframes, Output, Input, Equations,  
Parametric analysis, User needs, Methodology,  
Manuals, Programming manuals (U)  
IDENTIFIERS: Cost projections, WUAFDL1207,  
PE62201F (U)

IAC ACCESSION NUMBER: WCIC-100482  
IAC DOCUMENT TYPE: MCIC -HARD COPY--  
Contents: Input Forms: Key punching Data  
Cards: and Estimating Equations. (U)

IAC SUBJECT TERMS: M--(U)COSTS, MANUALS, FABRICATION,  
COMPUTER PROGRAMMING, HONEYCOMB, FINISHING, FIBER  
REINFORCED COMPOSITES.:

AD-A041 497

UNCLASSIFIED

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 496 11/4 14/1 9/2

NORTHROP CORP HAWTHORNE CALIF AIRCRAFT DIV

Advanced Composite Cost Estimating Manual.  
Volume II. Appendix.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 Apr 75-31 Mar 76.

AUG 76 156P LeBlanc, Donald J. ;  
Lorenzana, J. ; Kokawa, A. ; Bettner, T. ; Timson, F. ;

CONTRACT: F33615-75-C-3103

PROJ: 1207

MONITOR: AFFDL TR-76-87-Vol-2-App

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.

SUPPLEMENTARY NOTE: See also Volume 1. AD-A041 495.

DESCRIPTORS: \*Composite materials. \*Cost estimates.  
\*Computer applications. Computer program  
documentation. Computer programs. Programming  
manuals. Airframes. Fuselages. Parametric  
analysis. Skin (Structural). Programming  
languages. Subroutines. Manuals. Methodology  
IDENTIFIERS: WUAFDL1207. PE62201F

(U)

(U)

Contents: Computer Program Listing;  
Permanent Input Data Sets; Job Control  
Language and Sample Estimates.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 495 11/4 14/1 9/2

NORTHROP CORP HAWTHORNE CALIF AIRCRAFT DIV

Advanced Composite Cost Estimating Manual.  
Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Apr 75-31 Mar 76.

AUG 76 88P LeBlanc, Donald J. ;  
Lorenzana, J. ; Kokawa, A. ; Bettner, T. ; Timson, F. ;

CONTRACT: F33615-75-C-3103

PROJ: 1207

MONITOR: AFFDL TR-76-87-Vol-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A041 497.

DESCRIPTORS: \*Composite materials. \*Cost estimates.  
\*Computer applications. Airframes. Manuals.  
Punched cards. Methodology. Parametric analysis.  
Standards. Labor. Honeycomb cores. Data bases  
IDENTIFIERS: WUAFDL1207. PE62201F

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IAC ACCESSION NUMBER: MCIC-100481

IAC DOCUMENT TYPE: MCIC -HARD COPY--

This program concentrated on the development of a  
computerized system that estimates the recurring  
costs associated with the fabrication of advanced  
composite detail parts and components. The system  
employs Industrial Engineering Standard  
equations developed in the program to calculate  
standard hours for the detail composite fabrication  
operations of layup, core preparation, part  
consolidation and finishing. With these standards  
as base, recurring costs are derived through the  
application of variance factors, improvement curve  
slopes and labor rates. (Author)

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IAC SUBJECT TERMS: M--(U)COSTS. MANUALS. COMPUTER  
PROGRAMMING. FABRICATION. FIBER REINFORCED COMPOSITES.:



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 467 14/1 5/1

ARMY WAR COLL CARLISLE BARRACKS PA

Implementation of Risk Assessment in the  
Total Risk Assessing Cost Estimate  
(Trace).

(U)

DESCRIPTIVE NOTE: Study project rept..  
MAY 77 83P Venzke, Gene A. :

UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: \*Cost estimates. \*Risk analysis.  
\*Systems management. Probability distribution  
functions. Research management. Cost models  
IDENTIFIERS: TRACE (Total risk assessment cost  
estimate). Total risk assessment cost  
estimate

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The concept of the Total Risk Assessing  
Cost Estimate (TRACE) was articulated by the  
ASA (R and D) on 12 July 1974. It is a means  
of explicitly accommodating the unforeseen and  
unidentifiable costs which characterize research and  
development projects. The TRACE is required to  
possess the property that it is an estimate of the  
50th percentile of the project cost probability  
distribution. Unfortunately, early attempts to  
implement the TRACE met with limited success. A  
formalized study was undertaken to develop adequate  
techniques and two candidate methodologies emerged.  
One of the approaches, the TRACE Network Model,  
is extremely promising. The second technique,  
TRACE Risk Tabulation, can be improved upon by a  
modification involving computer generation of the  
imbedded probability distribution. There remain  
some problems in 'educating' users of the value of  
the TRACE, and the TRACE concept suffers from  
some inherent shortcomings. It is recommended that  
the new techniques for developing the TRACE be  
implemented, along with some ancillary actions to  
support the implementation and enhance the usefulness  
of the TRACE. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 435 1/5 15/5

AEROSPACE SYSTEMS INC BURLINGTON MASS

Report on Airport Capacity: Large Hub  
Airports in the United States.

(U)

DESCRIPTIVE NOTE: Final rept..  
MAY 77 800P Gentry, Daniel E. ; Howell,  
Jack D. ; Taneja, Nawal K. ;  
MONITOR: FAA-AVP 77-25

UNCLASSIFIED REPORT

DESCRIPTORS: \*Airports. \*Terminal flight facilities.  
\*Air traffic. Capacity (Quantity). Urban areas.  
United States. Centralized. Requirements. Cost  
estimates. Statistical data. Ground support  
equipment. Efficiency. Ground traffic. Hubs.  
Access. Civil aviation. Air transportation. Data  
acquisition

(U)

This report describes an airport capacity analysis  
recently completed for the large hub airports of the  
United States. A total of 104 airports,  
including thirty major air carrier airports, were  
evaluated. Information was collected on existing  
and planned airport capacities and facilities for the  
airport airside, terminal, and landside components.  
Data on ticket counters, curb frontages, baggage  
claim devices, security checkpoints, parking, gates,  
runways, and many other items were obtained. This  
report describes the study motivation, data sought,  
survey methodology, and data sources. Preliminary  
findings of the study and outlines for future  
applications for the data collected are also  
discussed. Actual data obtained from the airports  
are included within the report. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 426 15/5 14/1 9/2

AIR FORCE LOGISTICS COMMAND WRIGHT-PATTERSON AFB OHIO  
DIRECTORATE OF MANAGEMENT SCIENCESAn Operational Version of the Depot  
Purchased Equipment Maintenance Allocation  
Model (DPEM MODEL).

(U)

DESCRIPTIVE NOTE: Final report.

JAN 77 163P Hillis, H. David ; Milborrow,

Graham C. ; Reed, Maurice L. ;

REPT. NO. Working Paper-90

MONITOR: AFIC 77-1

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.

DESCRIPTORS: \*Logistics planning. \*Cost models.  
\*Maintenance equipment. \*Maintenance management.  
Cost analysis. Computer programs. Repair.Allocations. Air force budgets  
IDENTIFIERS: Workloads. Depot purchased equipment  
maintenance

(U)

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The purpose of this study is to provide a narrative description of a cost allocation model for Depot Purchased Equipment Maintenance. The model is configured for the Honeywell 635 Computer supporting remote terminals and batch remote facilities via a Honeywell 115 operating in an open shop environment. Included are the computer programs and samples of the output products. Although this report is peculiar to the Air Force Logistics Command's Directorate of Materiel Requirements at WPAFB it is adaptable for other cost allocation areas and can be done rather easily. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 331 15/5 14/1 5/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLConsolidation of RPMA at Fayetteville, NC.  
Volume IV. General Procedures for  
Conducting RPMA Consolidation Studies.

(U)

DESCRIPTIVE NOTE: Final report.

JUN 77 169P Brown, David W. ; Nay, Joyce

L. ; Kirby, Jeffrey G. ;

REPT. NO. CEPL-TR-C-73-Vol-4

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1 AD-A033  
754.DESCRIPTORS: \*Military facilities. \*Maintenance  
management. \*Cost analysis. Centralized. North  
Carolina. Joint military activities. Feasibility  
studies. Management information systems. Resource  
management. Decision making. Economic analysis.  
Methodology. Management planning and control.  
Logistics support. Maintenance equipment. Army.  
Air Force. Military planning. Manpower  
utilization. Maintenance. Cost effectiveness.  
Savings

(U)

IDENTIFIERS: Real property. Fayetteville (North  
Carolina). Fort Bragg. Pope Air Force  
Base. Consolidation

(U)

This report presents general procedures for conducting a feasibility analysis for consolidating real property maintenance activities (RPMA) at military installations. The procedures are based on the cost analysis conducted by the U.S. Army Construction Engineering Research Laboratory as part of the RPMA consolidation study for Fort Bragg and Pope AFB, Fayetteville, NC. The report presents the initial planning required and the concepts necessary to compare the current method of operation of the existing facilities engineering organizations with that of the proposed Army RPMA consolidated organization. The procedures are based on the assumption that the Army is the lead service for the consolidation and that Army policies will be used. Although based on Army and Air Force RPMA data, the procedures should be generally applicable to the Navy.

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AD-A041 331

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A041 308 15/5 14/1

DRC INVENTORY RESEARCH OFFICE PHILADELPHIA PA

Retail Stockage Policy under Budget Constraints.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUN 77 64P Kaplan, Alan J. ;  
REPT. NO. IRC-241

UNCLASSIFIED REPORT

DESCRIPTORS: \*Inventory analysis. \*Cost effectiveness. Probability. Stochastic processes. Optimization. Budgets. Retail. Inventory control. Retention(General). Computer programs

(U)

Retail level units are subject to budgetary constraints when they order support items. At the same time, the stockage policies under which they operate do not attempt to relate stockage quantities to funds available. This study found that cutting reorder points was substantially more cost/effective than cutting operating levels in that there is a smaller impact on fill rates for each dollar cut. Modifying stockage list retention criteria worked very well for one OSU unit, and very poorly for another, and therefore could not be recommended generally despite its potential. In doing the study a Budget/Performance Evaluator (B/PE) was programmed. This is a computer program which can project budgetary requirements and fill rates for any retail unit, using input data about each item managed and the stockage policies to be followed. The input data is the same data needed for day to day management of the items. The B/PE differs from comparable programs already available in that it was designed to be accurate over the short term (e.g. 3 to 6 months). (Author)

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Z0W07

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A041 115 13/2 5/3

CORPS OF ENGINEERS DETROIT MICH DETROIT DISTRICT

Southeastern Michigan Wastewater Management Survey Scope Study Design and Cost Appendix.

(U)

DESCRIPTIVE NOTE: Final rept.

MAY 74 556P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Original contains color plates: All DDC reproductions will be in black and white. Design and Cost Appendix to AD-A041 112. See also AD-A041 116.

DESCRIPTORS: \*waste management. \*waste water. \*Cost analysis. Michigan. Sewage treatment. Technology. Municipalities. Industries. Engineering. Cost estimates. Tables(Data). Engineering drawings

(U)

This report investigates technical design and cost considerations involved in the development of wastewater management alternatives for municipal, industrial, and stormwater discharges to the surface waters of Southeastern Michigan. Treatment technology choices, alternative system components, and the design and cost of total alternative systems are presented. Treatment technology choices are limited by strict design criteria which requires the highest water quality levels attainable by existing technology. The systems which have been developed for this purpose include Advanced Waste Treatment, Independent Physical-Chemical Treatment, and Land Treatment. Alternative system components were developed from three alternatives which were based on the total use of one of the three technology choices. Alternative components resulted when systems serving individual subareas were compared. The combination of subareas, each with a potentially different technological choice, resulted in the formation of multiple technology systems. The final design of multiple technology systems optimized on an engineering economic cost effective basis resulted in the formation of some of the alternatives.

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AD-A041 115



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A040 742 13/13 5/1 14/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLMilitary Construction Supervision and  
Administration Cost Forecasts.

(U)

DESCRIPTIVE NOTE: Final rept.,

MAY 77 43P O'Connor, Michael J. ;

Thompson, Bruce ;  
REPT. NO. CERL-TR-P-80

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Construction, \*Management planning and control, \*Cost analysis, Mathematical prediction, Estimates, Regression analysis, Forecasting, Maintenance, Statistical analysis, Supervision, Administrative personnel, Rates, Variables, Curva fitting

(U)

This report presents a statistical model for forecasting supervision and administration (S and A) costs to aid the Directorate of Military Construction, Office of the Chief of Engineers, in establishing yearly limits for Corps of Engineers Division/District S and A rates. Data for 12 military construction Divisions/Districts from fiscal year 1963 (FY63) through FY76 were analyzed. A statistically significant model for 10 Districts was developed and verified using a retrospective test. S and A costs/rates for FY77 and FY78 were predicted as a function of the estimated work placement. (Author)

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AD-A040 742

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A040 447 14/1 5/1 15/7

LOGISTICS MANAGEMENT INST WASHINGTON D C

Ship operating and Support Costs:  
Guidelines for Analysis.

(U)

MAY 77 89P Fiorello, Marco R. ; Salzer,  
Robert S. ; Wilk, Joseph R. ;  
REPT. NO. LMI-75-1/2  
CONTRACT: SC-321

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval vessels, \*Life cycle costs, Cost analysis, Acquisition, Ships, Naval procurement, Naval planning, Weapon systems, Planning programming budgeting

(U)

The Military Departments and defense contractors have for some time been actively concerned about rising life cycle costs (LCC) of Defense weapon systems. Over the past two years, the Department of Defense (DoD) has placed new emphasis on examining the projected operating and support (O and S) costs of planned weapons and finding ways to reduce those costs. O and S cost analyses are now a major part of the cost review conducted at each weapon procurement decision meeting by the Defense Systems Acquisition Review Council (DSARC) and the DSARC's principal advisor on new system costs--the Cost Analysis Improvement Group (CAIG). This report recommends guidelines for preparing estimates of the support investment (SI) and O and S costs of ship acquisition programs and presenting them to the DSARC. It provides a framework for objective comparison of SI and O and S costs of program, design, or support alternatives, using consistent methodologies and terminology. A general methodology for SI and O and S cost estimating is described, a standard cost element structure for ships is defined, and specific requirements for presentation of SI and O and S cost estimates to the DSARC are proposed. Standards for the presentation and documentation of these cost estimates are also recommended. These guidelines are intended to achieve consistent and effective preparation and documentation of SI and O and S cost estimates for major weapon systems.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A040 353 1/3 5/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

Sensitivity of Army Helicopter Operating and Support Costs to Changes in Design and Logistic Parameters.

MAY 77 56P Forster, John D. ;  
REPT. NO. LMI-75-1/4  
CONTRACT: SD-321

UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Cost analysis, Reduction, Sensitivity, Cost estimates, Reliability, Maintainability, Maintenance personnel, Repair, Spare parts, Replenishment, Army procurement, Logistics management, Data bases, Resources, Allocations, Pilots, Flight crews, Manpower

IDENTIFIERS: UTTAS, UH-1H aircraft, H-1 aircraft, AAH aircraft, AH-1S aircraft

This study assesses Army helicopter O and S costs and Support Investment (SI) costs in order to assure that the degree of hardware design and logistic parameter sensitivity included in cost estimates accurately reflects actual expenditure sensitivities. Army O and S cost data sources, methodology, and approaches are examined, and selected cost improvements isolated and evaluated. Strengths of the current costing structure are noted so that they can be carried forward and improved upon to assure accurate representation of new systems to the DSARC. O and S data sources reviewed include reliability, maintainability, and field reported cost data. The present methodology and approaches for both Baseline (Program Manager's) Cost Estimates (BCE) and Independent Parametric Cost Estimates (IPCE) are assessed. The dominant O and S costs are found to be Manpower, Replenishment Spares, and Initial Spares. For Manpower and Initial Spares, simplified models are discussed which give OASD visibility into the critical sensitivities of Army helicopter O and S costs. Of the parameters examined for the selected helicopters,

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A040 209 5/3

NAVAL WEAPONS CENTER CHINA LAKE CALIF

Fuel Cost Escalation Study.

(U)

DESCRIPTIVE NOTE: Summary rept. Jan-Oct 76.

APR 77 '32P Kappelman, Ellis E. ; Lee, Stephen M. ; Kiever, Ruth F. ; Cruise, D. R. ;  
REPT. NO. NWC-Tp-5958  
MONITOR: GIDEP.GIDEP E076-0434.347.00.00.00-X7-188

UNCLASSIFIED REPORT

DESCRIPTORS: \*Energy consumption, \*Cost analysis, Coal, Natural gas, Petroleum industry, Electricity, Inflation(Economics), Naval planning, Fuels, Energy management, Economic analysis

(U)

A fuel and energy cost escalation study was conducted to provide a projection of the costs of fuel oil, natural gas, coal and electricity to the year 2020. Upper and lower limits on probable prices are provided as well as most probable prices. These price projections were made based on examination of the nation's energy use, growth, resources, and price structure. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A040 119 14/1 9/2 5/3

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLComputer-Aided Final Design Cost  
Estimating System Overview.

(U)

DESCRIPTIVE NOTE: Interim rept..

MAY 77 12P O'Conner, Michael J. ;

Botero, S. A. ;

REPT. NO. CERL-IR-P-81

PROJ. 4A762790AT41

TASA: 01

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Computer aided  
design, Construction, Buildings, Maintenance

(U)

IDENTIFIERS: \*Cost engineering, ASI41,  
PE62790A, WU005

(U)

This report presents an overview of a proposed computer-aided final design cost estimating system that will help cost estimators prepare final design construction cost estimates. Use of the system and the cost estimating concepts on which the system is based are discussed. Data development and maintenance strategies are proposed.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A040 060 17/7 5/3

FEDERAL AVIATION ADMINISTRATION WASHINGTON D C SYSTEMS  
RESEARCH AND DEVELOPMENT SERVICECentral Flow Control Automation Program  
Cost-Benefit Analysis.

(U)

DESCRIPTIVE NOTE: Final rept..

SEP 76 54P Broglio, Carlo J. ; Hannan,

Thomas L. ;

REPT. NO. FAA/RD-77/53

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air traffic control systems, \*Cost analysis, Automation, Cost benefits, Air traffic, Energy consumption, Air pollution, Airports, Aircraft noise, Life cycle costs

(U)

This report contains an analysis of the benefits and costs associated with the Central Flow Control Automation Program. It presents the projected benefits and costs of both the current system and proposed system in terms of present-value dollars. Resultant benefit and cost differentials are discussed in terms of net present value and benefit-to-cost ratio. The sensitivity of these measures to major program uncertainty is described.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 922 5/4

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Foreign Military Sales (FMS): Costs,  
Benefits, and a New Approach.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
MAR 77 131P Parker, Jimmie Roscoe ;  
Hawthurst, Jack Michael ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military assistance, \*Cost benefits,  
Cost analysis, Weapons, Exports, National  
security, Planning programming budgeting,  
International relations, Foreign policy, United  
States Government

(U)

An evaluation of the costs and benefits of the  
Foreign Military Sales (FMS) program is  
presented. Focusing on economic, military, and  
political factors, a comparative analysis reveals  
that the FMS program is beneficial to the United  
States at this time. However, if program controls  
are not improved the FMS program could become  
detrimental to national security. The recommended  
approach to improved program controls is more  
involvement of the State Department in DOD's  
Security Assistance Planning, Programming, and  
Budgeting System (PPBS) and better coordination  
and analysis of data already available in the system.

(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 813 15/5 19/6

ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND ILL  
SYSTEMS ANALYSIS DIRECTORATE

Cost/Schedule Uncertainty Analysis for VADS  
Short-Range (RAM) Product Improvement  
Program.

(U)

DESCRIPTIVE NOTE: Final rept..  
FEB 77 51P Trieber, Norman H. ;  
REPT. NO. DRSAR/SA/N-55

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air defense, \*Guns, \*Quality  
assurance, \*Cost analysis, \*Self propelled guns,  
Towed bodies, Aircorne, Airmobile operations,  
Reliability, Maintainability, Modification kits,  
Manuals, Simulation, Scheduling, Uncertainty  
IDENTIFIERS: Vulcan Air Defense System,  
Availability, M-163 guns, M-167 guns

(U)

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A cost/schedule uncertainty analysis was conducted  
on the short range (RAM) product improvement  
program (PIP) for the Vulcan Air Defense  
System (VADS). The short range PIP addresses  
the product improvements to the self-propelled  
(M163) and towed (M167) VADS, changes to  
VADS support and test equipment, and documentation  
of those changes in the appropriate technical  
manuals. The Venture Evaluation and Review  
Technique (VERT), a network analyzer, was used to  
simulate the VADS PIP from July 1, 1976 to the  
completed application of all product improvements and  
the fielding of the new manuals and test equipment.  
(Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 563 5/1 12/2

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Parametric Cost Estimating.

(U)

DESCRIPTIVE NOTE: Project rept.,  
MAY 74 46P Devens, Robert J. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement, \*Cost estimates.  
Materiel, Acquisition, Weapon systems,  
Management planning and control, Parametric  
analysis

(U)

This paper is a study in parametric cost estimating or what is commonly referred to as cost estimating relationships (CERs) used in the Department of Defense. It covers the background, data collection, basic methodology and the uncertainty involved in the use of parametric type estimates. The information within has been extracted from various sources and includes the current method and means for obtaining data in addition to the uncertainty involved in parametric cost estimates. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 474 5/1 15/5 9/2

RCA GOVERNMENT SYSTEMS DIV BURLINGTON MASS AUTOMATED SYSTEMS

LOCAM 5. Volume II. Programmer/Users Manual.

(U)

DESCRIPTIVE NOTE: Final rept.,  
FEB 77 272P Seaberg, Ernest C. ; Howe,  
Russell E. ;  
REPT. NO. C7-76-586-019-Vol-2  
CONTRACT: DAAH01-76-C-1071  
MONITOR: DROMI-D 77-2-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A073 560.

DESCRIPTORS: \*Maintenance management, \*Cost analysis, \*Logistics support, Computer programs, Programming manuals, Systems analysis, User needs, Deployment, Manpower, Life cycle costs, Policies, Decision making  
IDENTIFIERS: Locam 5 computer program, User manuals, Availability

(U)

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Logistics Cost Analysis Model 5 is an upgraded model of maintenance policies utilized by the US Army Missile Command and the US Army Weapons Command. Model progression included Missile Command, Weapons Command cost analysis of maintenance policies, and Logistics Cost Analysis Models 2, 3, and 4. It is an analytical computer program capable of representing field logistic support functions and flow. It computes life cycle costs and operational availability for alternate system support concepts. Output includes provisioning requirements and operational elements both by numbers and cost. Variable dimensions are limited only by the computer. Parameters include extensive specification of factors for: deployment, equipment, supply, maintenance, and test equipment. Sensitivity to all input factors is possible.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 369 14/1 5/1 1/3

LOGISTICS MANAGEMENT INST WASHINGTON D C

Aircraft System Operating and Support  
Costs: Guidelines for Analysis.

(U)

MAR 77 94P Betaque, Norman E. , Jr.;  
Fiorello, Marco R. ;  
REPT. NO. LMI-75-1  
CONTRACT: SD-321

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Military aircraft,  
\*Cost estimates, \*Cost analysis, Standards,  
Reports, Fixed wing aircraft, Rotary wing  
aircraft, Acquisition, Costs, Weapon systems,  
Military procurement, Logistics support,  
Operation, Management planning and control,  
Decision making

(U)

As weapon system life cycle costs have risen, DoD has placed new emphasis on examining the operating and support (O/S) cost impacts of planned new weapons and finding ways to reduce these costs. O/S cost analyses are now a major part of the cost review conducted at each weapon procurement decision meeting by the Defense Systems Acquisition and Review Committee (DSARC) and the Cost Analysis Improvement Group. This report recommends guidelines for preparing and presenting estimates of the support investment (SI) and O/S costs of fixed and rotary wing aircraft systems to DSARC. It provides a framework for objective comparison of SI and O/S costs of program, design, or support alternatives, using consistent methodologies and terminology. It also focuses on assessment of efforts to control downward costs of weapon systems in the acquisition phase. General methodology for SI and O/S cost-estimating is described, a standard cost element structure is defined, and specific requirements for presenting SI and O/S cost estimates to DSARC are proposed. Standards for the presentation and documentation of those cost estimates are recommended.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 089 11/9 13/4

AIR FORCE PACKAGING EVALUATION AGENCY WRIGHT-PATTERSON AFB  
OHIOEvaluation of Polypropylene and Polyethylene  
Cushion Wrap Materials.

(U)

APR 77 16P Brown, Richard V. ;  
REPT. NO. PIPT-77-17

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Polyethylene plastics, \*Polypropylene,  
\*Packaging, \*Cushioning, \*Cost effectiveness,  
Mathematical models, Test methods, Acceleration,  
Stress testing, Static tests, Creep, Graphs

(U)

The objective of this study was to evaluate the static and dynamic cushioning properties of polyethylene wrap material in relation to polypropylene wrap material and to determine the relative cost effectiveness of the two materials in package designs. Peak acceleration (Gs) versus Static Stress curves and 'Creep' characteristics were developed for both materials. Using these data and a mathematical model, a cost analysis was accomplished. The results showed that no cost savings could be realized by substituting polyethylene for polypropylene. However, polyethylene should be considered as an alternative to polypropylene in new pack designs when item fragility and static bearing stress considerations result in equivalent material costs. (Author)

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AD-A039 089

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 062 1/3 21/5 14/1

RAND CORP SANTA MONICA CALIF

Life Cycle Analysis of Aircraft Turbine Engines: Executive Summary.

(U)

DESCRIPTIVE NOTE: Interim rept..

MAR 77 62P Nelson, J. R. ;

REPT. NO. R-2103/1-AF

CONTRACT: F49620-77-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Executive summary of Rept. no. R-2103-AF.

DESCRIPTORS: \*Gas turbines, \*Turbojet engines, \*Turbofan engines, \*Life cycle costs, \*Cost analysis, \*Aircraft engines, Aircraft maintenance, Depots, Spare parts, Procurement, Maintenance, Models, Commercial aircraft, Military aircraft, Comparison

(U)

Presents a methodology for life-cycle analysis of aircraft turbine engines that weapon-system planners can use to estimate certain performance/schedule/cost tradeoffs early in the design and selection phase of acquiring this important subsystem. Prompted by the steadily escalating costs of engine acquisition and ownership, the study finds that engine life-cycle costs are much larger than and different from what had previously been realized. For example, depot costs alone will exceed procurement costs for a new engine with an operational lifespan of 15 years. Ownership-data availability being the most serious obstacle, the study recommends that the Air Force begin collecting and preserving disaggregated, homogeneous, longitudinal data at both depots and bases, associated with specific engine types. The findings also suggest numerous improvements in operational and maintenance procedures that the Air Force could adopt in the near term (the Air Force has already initiated studies in some of these areas). (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 761 14/1 14/4

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

Cost Optimizing System to Evaluate Reliability (COSTER).

(U)

DESCRIPTIVE NOTE: Technical rept. Jan 75-Dec 76.

APR 77 48P Solomon, John P. ; Marseglia, Grace A. ;

REPT. NO. ECCM-4487

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Also available as condensed version in the Proceedings of the Reliability and Maintainability Paper (Annual) n1469 p385-390 1977.

DESCRIPTORS: \*Cost models,

\*Failure (Electronics), \*Reliability (Electronics), Cost analysis, Electronic equipment, Specifications, Maintainability, Trade off analyses, Optimization

(U)

Specific attention is currently being addressed to the overall cost of the reliability specification as early as the development stage in an equipment's life cycle. In order to assess the impact of changes in an equipment's reliability specification, it must be possible to predict and monitor the effects of such changes on an equipment's reliability testing and field support costs. This research report elaborates the respective cost and reliability improvements resulting from six major reliability program efforts prior to an equipment's field deployment. The six efforts are: (1) the design review; (2) the reliability prediction program; (3) the failure mode, effects, and criticality analysis (FMECA); (4) the parts program, in which MIL-STD and high reliability parts are selectively used in place of commercially available parts; (5) the reliability testing programs; and (6) the Burnin test. One hundred sixty exhaustive 'policies' are analyzed with respect to their cost and resultant reliability. Each policy is a specific combination of the reliability program tasks imposed. The total policy cost is the sum of the reliability program cost and the expected field support cost after the equipment is deployed.

(U)

AD-A038 761

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ZOM07



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 654 5/11 5/9 5/10 5/2

CONTROL ANALYSIS CORP PALO ALTO CALIF

Cost and Retention Impacts of the Navy's  
Conus Recreation Program.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jan-31 Aug 75.  
SEP 75 238P Lalchanjani, Atam P. ;  
Humphreys, Thomas H. ; Morey, Richard C. ; Snyder,  
David P. ; deAndrade, Anthony B. ;  
CONTRACT: N00014-75-C-0628

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Recreation, \*Naval personnel,  
\*Fringe benefits, \*Retention(General), \*Cost  
benefits, All volunteer, Morale, Recruiting,  
Naval training, Surveys, Naval shore facilities,  
United States, Retirement(Personnel), Taxes,  
Salaries, Sampling, Cost models,  
Questionnaires

(U)

This study is an evaluation of the benefits and costs associated with the Navy's shore-based Recreation Program. The evaluation is achieved by determining the cost effectiveness of the Overall Recreation Program as well as that for the fourteen individual Recreation Categories. A significant by-product of the cost-effectiveness has been the estimation of income from and costs (operating as well as capital costs) of individual Recreation Categories. The results are based on extensive information gathered from over 11,000 active duty eligible users as well as the managers of the Recreation Program at 16 diverse Navy Installations in CONUS. The Recreation Program has been evaluated not only in terms of its benefits to the Navy individual and dependents but also with respect to its overall impact on the Navy in terms of maintaining retention rates. This evaluation has been accomplished utilizing econometric models that take into account established relationships between changes in income and changes in retention. Other key ingredients of these model are estimates of recruiting and training costs utilized in the retention cost calculations. In addition, optimization models for resource allocation across the Recreation Categories have been developed.

(U)

AD-A038 654

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 539 1/3 5/3

AVIATION DATA SERVICES INC WICHITA KANS

United States General Aviation.

(U)

DESCRIPTIVE NOTE: Final technical rept. 1959-1975.  
JUL 76 92P  
CONTRACT: DDT-FA76WA-3819  
MONITOR: FAA-AVP 76-12

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Civil aviation, \*Cost analysis, Fuel  
consumption, Aircraft, Statistics,  
Tables(Data)

(U)

This report presents data on general aviation cost of operations, aircraft value, fuel cost, plus fleet size and hours flown. This information is presented in historical time series and is tabulated by aircraft type and user category. The period 1959 through 1975 is covered by this report.  
(Author)

(U)

AD-AC38 539

UNCLASSIFIED

ZOM07



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 477 14/1 12/2 5/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

OSCR System Applications Analysis. (U)

DEC 76 95P Domin, Joseph S. ; Webster, Craig A. ;  
 REPT. NO. LMI-76-15  
 CONTRACT: SD-321

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis. \*Management information systems, Life cycle costs, Maintenance management, Weapon systems, Logistics management, Air Force planning, Systems analysis (U)

The Operating and Support Cost Reporting System, a management information system developed by the U. S. Air Force, is analyzed to determine how well the cost information needs of specific decisions and analytical processes are satisfied by output from the OSCR system. The capabilities and limitations of the present OSCR system are identified and a plan for implementing a series of recommended improvements is presented. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 190 5/9 14/2

ILLINOIS UNIV AT URBANA-CHAMPAIGN SAVOY AVIATION RESEARCH LAB

Simulators for Training and Profit. (U)

DESCRIPTIVE NOTE: Technical rept.  
 JUL 76 8P Hopkins, Charles D. ;  
 REPT. NO. ARL-76-10/AFOSR-76-5  
 CONTRACT: F44620-76-C-0009  
 PROJ: 2313  
 TASK: A4  
 MONITOR: AFOSR TR-77-0373

UNCLASSIFIED REPORT

DESCRIPTORS: \*Flight simulators. \*Cost effectiveness, Avionics, Flight training, Simulation, Military training, Skills, Reliability, Human factors engineering (U)  
 IDENTIFIERS: PE61102F, XUAFO5R2313a4 (U)

The use of simulators for training and profit is discussed in terms of the concept of cost effectiveness. Increased degree and fidelity of simulation require greater equipment complexity and cost. Data are presented that show a high negative correlation between cost and field reliability of avionics equipment. There is a paucity of research data on the relationships between simulator fidelity and transfer effectiveness. The results of the first and only recently completed experiment to investigate transfer of initial flight training as a function of simulator cockpit motion are summarized. A rational basis for simulator selection and use developed by Jacobs and Roscoe is presented. The need for research to establish relationships between transfer of training and physical characteristics such as degree and fidelity of simulation is seen as critical to the widespread future use of simulators for training and profit. (Author) (U)



## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A037 920 13/2 14/1 10/2

RAND CORP SANTA MONICA CALIF

The Move Towards Marginal Cost Pricing in Electricity, (U)

JUN 76 21P Acton, Jan Paul ;  
REPT. NO. P-5673

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Public utilities, \*Electricity,  
\*Cost analysis, \*Electric power distribution,  
Energy conservation, Costs, Environments,  
Foreign technology, United States, History (U)IDENTIFIERS: \*Marginal cost pricing, Marginal  
costs, Embargos (U)

It comes as no surprise to observers and participants in the American electricity scene that a lot of things have changed recently. But what is emerging more slowly is the relationship between some of these recent changes and the need to reform the basic manner by which we set the price of electricity. The purpose of this paper is to try to draw together some of the principal factors behind the movement towards rate reform and to discuss some of the fact needed to judge whether the suggestions are useful for a particular utility. Three main areas are: First, what has changed in American electricity that causes us to reexamine the pricing. Second, why is marginal cost pricing considered the most attractive alternative to present rate structures. Third, what do you need to know before deciding to implement marginal cost pricing in a particular utility. (U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A037 790 17/7 17/9 14/1

TRANSPORTATION SYSTEMS CENTER CAMBRIDGE MASS

Airport Surface Traffic Control Tags  
Planning Alternatives and Cost/Benefit  
Analysis. (U)

DESCRIPTIVE NOTE: Final rept. Dec 75-Mar 76.

JAN 77 50P Rempfer, Paul S. ;

REPT. NO. TSC-FAA-76-23

MONITOR: FAA-PJ 77-9

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air traffic control systems, \*Search  
radar, \*Cost benefits, \*Cost analysis, \*Airport  
radar systems, Runways, Taxiways, Airports,  
Automatic, Display Systems, Costs, (U)Sensitivity  
IDENTIFIERS: TAGS(Tower Automated Ground  
Surveillance), Tower Automated Ground  
Surveillance (U)

The findings of a cost/benefit analysis of the deployment of a new airport ground surveillance system TTAGS (Tower Automated Ground Surveillance) are presented. TAGS will provide a plan view display of aircraft on the airports taxiways and runways like ground surveillance radar (ASDE); but unlike ASDE, TAGS will perform in heavy precipitation and automatically acquire and display aircraft flight identity. The findings indicate that a TAGS deployment of between four and nine systems is cost/beneficial. The development plan, system costs, analysis approach and sensitivity analysis supporting the findings are provided. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A037 434 1/2 14/1

NOAH (J WATSON) ASSOCIATES INC ALEXANDRIA VA

Cost Benefit Analysis and the National  
Aviation System - A Guide.

(U)

DESCRIPTIVE NOTE: Final rept..

FEB 77 232P

Noah, J. W. ; Groemping, R.

A. ; Berterman, J. E. ; Greynolds, O. L. ;

REPT. NO. FR-1191-FAA

CONTRACT: DOT-FA76WA-3769

MONITOR: FAA-AVP 77-15

UNCLASSIFIED REPORT

DESCRIPTORS: \*Civil aviation. \*Cost benefits.  
Policies. Life cycle costs. Cost estimates.  
Aviation safety. Federal law. Standards. Air  
traffic control systems. Economic models. Economic  
analysis. Regression analysis. Linear programming.  
Monte Carlo method. Computations. Methodology

(U)

This manual contains a discussion of cost-benefit  
methodology as it applies to the national aviation  
system, an explanation of selected values for  
potential use in Federal Aviation  
Administration studies, and the principles,  
concepts, and techniques appropriate to estimating  
benefits and life-cycle cost. In addition,  
parameters useful for valuing changes in capacity,  
delay, and aviation safety are presented.  
(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A037 408 5/1 5/3

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO SYSTEMS ANALYSIS  
OFFICE

Cost of Terminating Contracts Study  
(COTCOS-I).

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 76 44P

Sutterfield, J. S. ;

REPT. NO. DPSAV-D-76-10

MONITOR: USAAVSCOM TR-76-44

UNCLASSIFIED REPORT

DESCRIPTORS: \*Contract proposals. \*Cost overruns.  
Army aircraft. Government (Foreign).  
Procurement. Curve fitting. Graphics. Systems  
approach

(U)

IDENTIFIERS: Contract termination liabilities

(U)

This study had as its object the development of a  
curve of termination liability for use on Army  
aircraft contracts. An equally likely or average  
curve was graphically developed from five sets of  
contract data. From this graphical curve and  
equation was developed. This equation provided an  
analytical curve that almost perfectly reproduced the  
original graphical curve. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD-A037 391 5/1 5/3 5/9

KETRON INC ARLINGTON VA

Supers MPN Expenditure Estimating.

(U)

DESCRIPTIVE NOTE: Final rept. 2 Jul 76-28 Feb 77.  
FEB 77 163P Augusta, Joseph H. ; Bryan,  
Judith A. ; Golding, James E. ; Hainline, Mark  
A. ; Nickel, Ronald H. ;  
REPT. NO. KFR-109-77  
CONTRACT: N00014-76-C-1037

UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: \*Naval budgets. \*Cost estimates.  
\*Naval personnel. Salaries. Cost overruns.  
Forecasting. Time series analysis. Computer  
programming. Subroutines. Computer applications.  
Flow charting  
IDENTIFIERS: Disbursement

(U)

(U)

The Bureau of Naval Personnel has responsibility for controlling expenditure of the MPN funds and, in particular, for ensuring that this expenditure does not exceed the amounts annually authorized by the Congress. Forecasting the precise level and time of disbursements is a difficult task, because claims for payment arise at a great diversity of sites and reporting delays can vary considerably. To guard against the possibility of overspending, the Bureau of Naval Personnel has refrained from planning to spend the full sum allotted it by Congress, holding some monies back so that it can deal with unexpected obligations. It is clearly desirable that these reserve assets be kept to a minimum consonant with a desired level of protection against overexpenditure. The purpose of this study is to develop the analytical tools to estimate reliably the proper margin of safety that BuPers should maintain to guard against overspending. The analysis of financial data of the BA(1) and BA(2) accounts of the past three fiscal years show that BuPers has exerted close control in keeping a proper relationship between actual expenditures and planned obligations. However, further refinements and improvements in the methods and procedures are possible.

(U)

AD-A037 391

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD-A037 384 5/4 5/3

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO

Foreign Military Sales. Construction of a Replacement Price (Some Considerations, Problems and Potential Solutions).

(U)

DESCRIPTIVE NOTE: Technical rept..  
FEB 77 35P Gille, Warren M. , Jr.  
REPT. NO. USAARVSCOM-TR-77-13

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military assistance. \*Military forces (Foreign). \*Cost estimates. Cost analysis. Spare parts. Replacement. Military procurement. Economic analysis. Learning curves. Inflation (Economics). Rates. Indexes

(U)

Part one is a brief historical sketch of military assistance, 1947 to date, especially the transition from grant aid to foreign military sales. Part two discusses construction of a replacement price and the considerations involved in estimating today's replacement cost for items purchased in the past. Part three discusses considerations involved in computing what actual replacement cost would be, taking into account future inflation, number of items procured, spendout, time required for procurement, and other influential factors. The purpose of this report is to provide insight into the theory of Replacement Pricing. Specifically, to identify problems which might not be evident to some FMS related personnel and provide illustrative examples. Additional information, glossary, charts, and explanations are presented, in order to make the document of use to a broad cross section of the Federal community.

(U)

AD-A037 384

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20M07



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A037 079 1/5 20/11 14/1

MITRE CORP MCLEAN VA

Estimation of UG3RD Capacity Impacts. (U)

DESCRIPTIVE NOTE: Final rep...

JAN 77 109P Smith, Arthur P. ;

REPT. NO. MTR-7138

CONTRACT: DOT-FA70WA-2448

MONITOR: FAA-AVP 77-9

UNCLASSIFIED REPORT

DESCRIPTORS: \*Runways, \*Airports, \*Impact tests,  
\*Cost benefits, Air traffic control systems (U)

IDENTIFIERS: Runway capacity (U)

This study provides airport runway capacity estimates for the top 30 U.S. air carrier airports for the FAA's Upgraded Third Generation ATC System Cost Benefit Study. The capacity estimates were made at five year intervals for both IFR and VFR conditions for the baseline and the five alternative configurations defined for the cost benefit study. The results indicate that if the UG3RD Generation ATC system is fully implemented by 1990 and if wake vortex conditions are favorable then nearly a 40% increase in capacity could be realized at the top 30 air carrier airports under IFR conditions and an increase of 23% under VFR conditions. The greatest increase in IFR capacity (48%) accrues to those airports which use a dual-jane runway configuration as their predominant mode of operations in IFR conditions. This increase in capacity is expected to reduce terminal area delays. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 830 8/6 13/2 5/1

CORPS OF ENGINEERS BALTIMORE MD BALTIMORE DISTRICT

Binghamton wastewater Management Study.  
Design and Cost Appendix. (U)

JUN 76 683P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Impact Assessment and Evaluation Appendix, AD-A036 831.

DESCRIPTORS: \*waste water, \*Waste management, \*New York, \*Cost analysis, Water pollution, Flood control, Planning, Watersheds, Rivers, Forecasting, Finance (U)

IDENTIFIERS: \*Binghamton(New York),  
Susquehanna River (U)

This appendix presents the documentation of the engineering analyses which formed the basis of the designs and costs of wastewater management systems. To a certain extent, the design and cost information was refined in an iterative fashion similar to the refinement of the plans themselves. The Design and Cost Appendix presents the development and methodology of the engineering analyses as well as the detailed design and cost of the final plans. The Plan Formulation Appendix documents all significant events and decisions involved in the formulation, evaluation, and selection of wastewater management plans. Other supporting appendices, presenting detailed information on particular elements of the Study include the following: Impact Assessment and Evaluation, Institutional Analysis, and Public Involvement. Also included is the Speciality Appendix which presents detailed analyses of investigations that either overlapped the other appendices or were of particular interest to participants in the Study. These investigations were: the Outlying Communities, river recreation, nonstructural measures, land application, non-point source pollution, and industrial wastewater management. A general profile of the Study Area is contained in the Background Information Appendix. (U)

AD-A037 079

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AD-A036 830

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 814 13/2

METCALF AND EDDY INC BOSTON MASS

Wastewater Engineering and Management Plan  
for Boston Harbor - Eastern Massachusetts  
Metropolitan Area EMMA Study. Technical  
Data Volume 15. Recommended Plan and  
Implementation Program.

(U)

OCT 75 144P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Original contains color plates:  
All DDC reproductions will be in black and white.  
Includes envelope with map. See also report dated Mar  
76, AD-A036 792.

DESCRIPTORS: \*Sanitary engineering, \*Cost analysis,  
\*Sewage treatment, \*Waste water, \*Waste  
management, Water treatment, Water pollution  
abatement, Management planning and control, Public  
utilities, Facilities, Sewage disposal, Pumping,  
Piping systems, Overload, Criteria, Finance,  
Regulations, Massachusetts, Urban areas  
IDENTIFIERS: Boston Harbor

(U)

(U)

This report covers the recommendations made as a  
result of the EMMA Study. While all items  
presented in this report are interrelated, early  
chapters of this report deal with specific items of  
the sewerage system while the later chapters deal  
with the costs of the program and the recommendations  
for financing and managing the system.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 405 17/2 13/2

GTE SYLVANIA INC NEEDHAM HEIGHTS MASS COMMUNICATIONS  
SYSTEMS DIV

ELF Communications SEAFARER Program. Site  
Survey. Michigan Region. Antenna  
Construction Cost Factors and Installation  
Plan.

(U)

DESCRIPTIVE NOTE: Final rept.

JUL 76 73P

CONTRACT: N00039-75-C-0309

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with Henkels  
and McCoy, Inc., Southfield, Mich.

DESCRIPTORS: \*Global communication systems,  
\*Environmental impact statements, \*Underwater  
communications, \*Radio links, \*Underground antennas,  
\*Cost analysis, Costs, Michigan, Extremely low  
frequency, Environments, Installation,  
Construction, Base lines, Surfaces, Depth  
IDENTIFIERS: \*Site survey, \*SEAFARER Project,  
Elf communications

(U)

(U)

A study of the methods and costs associated with  
the installation of the underground antenna cable  
portion of the SEAFARER Project is described.  
This study included a physical examination of the  
proposed installation site located in portions of the  
Upper Peninsula of Michigan. Final  
installation plans and costs will be determined when  
system design has been completed. The baseline data  
contained in the report will be extrapolated as  
required to support final costing. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 371 5/1 12/2

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

Introduction to Multiple State Multiple  
Action Decision Theory and Its Relation to  
Mixing Structures. (U)JAN 77 59P Engebos, Bernard Francis ;  
REPT. NO. ECOM-5810  
PROJ: DA-1-L-161102-B-53-A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Decision theory, \*Life cycle costs,  
\*Cost effectiveness, Game theory, Stochastic  
processes, Theorems (U)

A general mathematical framework is developed which addresses the problem of determining an optimal, or near optimal, course of action, when the outcome of a given course of action is known to be influenced by an evolving state of nature. In this context the advantage of knowledge of the natural state is balanced by the cost of obtaining this information. Such a structure, when considered as functioning over a given time interval, permits employment of life cycle cost versus possible gain. All the mathematical structures and related entities, and the underlying properties thereof, are developed in a manner that such tradeoff studies are possible. The theoretical development as presented is related to that of statistical game theory but with a broader set of objectives. Multiple aspects for the state of nature, and sets of permissible action are allowed, with these actions being capable of simultaneous performance. This leads to the introduction of multiple state multiple action decision theory and its basic framework, the 'mixing structure'. The concept of 'sensor mixes' is defined and related to the possibility of decreasing loss by the spying on the state of nature. The cost of obtaining this information is then balanced against the gain obtained by knowledge of the natural state. A resulting 'figure of merit' may be used to determine the desirability of each sensor mix. (U)

AD-A036 371

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 366 1/2 5/3

BATTELLE COLUMBUS LABS OHIO

Study of the Effects of Increased Costs on  
Corporate and Business Flying. Volume IV.  
Data Base. (U)DESCRIPTIVE NOTE: Final rept. 12 Jun 74-12 Aug 75.  
AUG 75 144P Porter, R. F. ; Duffy, M.  
A. ; Cote, R. W. ;  
CONTRACT: DOT-FA74WA-3485  
MONITOR: FAA-AVP 75-13-Vol-4

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3. AD-A036  
365.DESCRIPTORS: \*Air transportation, \*Cost analysis,  
Finance, Acquisition, Accounting, Flight crews,  
Salaries, Leasing, Taxes, Cost models, Systems  
engineering, Statistical data (U)IDENTIFIERS: General aviation, \*Business corporate  
flying, Corporate owned aircraft, Cost sensitivity  
analysis (U);Contents: Business/corporate category  
activity data, 1972; Cost data: Corporate owner  
characteristics. (U)

AD-A036 366

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 365 1/2 5/3

BATTELLE COLUMBUS LABS OHIO

Study of the Effects of Increased Costs on  
Corporate and Business Flying. Volume III.  
Planning Guide.

(U)

DESCRIPTIVE NOTE: Final rept. 12 Jun 74-12 Aug 75.  
AUG 75 63P Porter, R. F. ; Duffy, M.

A. ; Cote, R. W. ;

CONTRACT: DOT-FA74WA-3485

MONITOR: FAA-AVP 75-13-Vol-3

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-A036 364  
and Volume 5. AD-A036 366.

DESCRIPTORS: \*Air transportation. \*Cost analysis.  
Finance. Acquisition. Accounting. Flight crews.  
Salaries. Leasing. Taxes. Cost models. Systems  
engineering. Cost estimates  
IDENTIFIERS: General aviation. \*Business corporate  
flying. Corporate owned aircraft. Cost sensitivity  
analysis

(U)

(U)

;Contents: Discussion of limitations and  
instructions for use; Interpretation of Cost  
sensitivity and cost impact relationships;  
Evaluation procedure; Cost sensitivity charts;  
Cost impact charts; Example of cost impact  
evaluation procedure.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 364 1/2 5/3

BATTELLE COLUMBUS LABS OHIO

Study of the Effects of Increased Costs on  
Corporate and Business Flying. Volume II.  
Research Methodology.

(U)

DESCRIPTIVE NOTE: Final rept. 12 Jun 74-12 Aug 75.  
AUG 75 123P Porter, R. F. ; Duffy, M.

A. ; Cote, R. W. ;

CONTRACT: DOT-FA74WA-3485

MONITOR: FAA-AVP 75-13-Vol-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A036 363  
and Volume 3. AD-A036 365.

DESCRIPTORS: \*Air transportation. \*Cost analysis.  
Finance. Acquisition. Accounting. Flight crews.  
Salaries. Leasing. Taxes. Cost models. Systems  
engineering. Statistical data  
IDENTIFIERS: General aviation. \*Business corporate  
flying. Corporate owned aircraft. Cost sensitivity  
analysis

(U)

(U)

;Contents: Development of cost sensitivity  
coefficients; Cost impact relationships;  
Correlation of aircraft and business  
characteristics.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 363 1/2 5/3

BATTELLE COLUMBUS LABS OHIO

Study of the Effects of Increased Costs on  
Corporate and Business Flying. Volume I.  
Executive Summary.

(U)

DESCRIPTIVE NOTE: Final rept. 12 Jun 74-12 Aug 75.

AUG 75 42P Porter, R. F.; Duffy, M.

A.; Cote, R. W.;

CONTRACT: DOT-FA74WA-3485

MONITOR: FAA-AVP 75-13-Vol-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A036  
364.

DESCRIPTORS: \*Air transportation, \*Cost analysis,  
Finance, Acquisition, Accounting, Flight Crews,  
Salaries, Learning, Taxes, Cost models, Systems  
engineering

(U)

IDENTIFIERS: General aviation, \*Business corporate  
flying, Corporate owned aircraft, Cost sensitivity  
analysis

(U)

The report, in four volumes, presents the results  
of research intended to enhance the utility of the  
original General Aviation Cost Impact Study  
(DOT-FA74WA-3118) by (1) identifying  
subcategories of business/corporate operators with  
varying effective after-tax sensitivities, (2)  
redefining the empirical cost impact relationships  
for business/corporate flying by using an expanded  
data base, and (3) providing information to  
permit greater insight into the nature of the  
business fleet by examining the financial  
characteristics of corporate owners.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 327 5/3 12/1

COCKERHAM (JOHN M) AND ASSOCIATES INC HOPEWELL VA

US Army Total Risk Assessing Cost  
Estimate (TRACE) Guidelines.

(U)

DESCRIPTIVE NOTE: Technical rept.

DEC 76 94P

CONTRACT: DAAH01-76-C-1088

PROJ: 1W362303A214

MONITOR: RC 77-3

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Army budgets, \*Risk  
analysis, Network flows, Scheduling, Uncertainty,  
Flow charting, Allocations, Cost overruns

(U)

IDENTIFIERS: Trace analysis, \*Total risk assessing  
cost estimates, AS214, PE62303A

(U)

This report describes the background, logic, and  
purpose of the TRACE concept. Some basic  
methodologies for conducting TRACE analyses are  
described and illustrated. Procedures to be  
followed for obtaining risk capital are also  
described and illustrated. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 177 5/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Implementing Replacement Cost Accounting.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
DEC 76 75P Clickener, John Ross :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Accounting, \*Replacement, \*Costs, \*Inflation(Economics), Value, Economics, Foreign, Great Britain, United States, Theses

IDENTIFIERS: Replacement cost, Price changes

(U)

(U)

This thesis examines the methods proposed and employed to recognize the effects of inflation in financial reporting. A brief discussion of the development of valuation theory is presented and the principal alternatives to the present historic cost based method are described. The development of specific inflation accounting proposals and methods is described. The proposals for general price-level adjusted financial statements by the accounting profession are identified, and emphasis is given to the description of the replacement cost methods adopted by the governments in the United States and England. Specific methods of developing replacement costs in compliance with existing regulations are analyzed. The implementation and impact of replacement costing on a firm is described and possible alternatives to the specific method employed are explored. Conclusions are drawn as to the value of the replacement cost financial data, and opinions are offered concerning appropriate valuation methods. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 159 5/9 14/2 14/1 1/3

ARMY TRAINING SUPPORT CENTER FORT EUSTIS VA

Test and Evaluation of the Army's CH-47 Helicopter Flight Simulator.

(U)

JAN 77 27P Toomey, John :

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the DoD/NASA Simulation Technology Coordination Group Meeting (3rd), 18 Jan 77, Naval Training Equipment Center, Orlando, Florida.

DESCRIPTORS: \*Army training, \*Flight simulators, \*Training devices, \*Transfer of training, \*Cost effectiveness, \*Flight training, \*Helicopters, Flight simulation, Test and evaluation, Television display systems, Television cameras, Terrain, Army procurement, Pilots, Cost analysis, Visual surveillance

(U)

IDENTIFIERS: CH-47 aircraft, H-47 aircraft, Visual systems, BOIP(Basis Of Issue Plan), Basis of Issue Plan

(U)

This report gives an overview of the Army's current efforts to test and evaluate the prototype CH-47 Helicopter Flight Simulator (CH47FS). This effort includes a combined development and operational test (D7/OT II) and a Cost and Training Effectiveness Analysis (CTEA). The CH47FS is the first prototype of the Army's new generation flight simulators with six degrees of freedom motion system which incorporate a video camera/terrain board visual system. The current evaluation represents a significant advance in the procedures and methods for validation of the Army's stated flight simulator requirements. During the operational test, transfer of training experiments will be conducted for both institutional and unit pilot training, and objective and subjective training effectiveness data will be collected. The CTEA, using data generated by the test, will evaluate the simulator cost and training effectiveness for various training packages, defined in terms of the extent of substitution of aircraft by simulator in pilot training. A Basis of Issue Plan (BOIP) model for flight simulators, based on mathematical programming techniques.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 146 5/3

CENTER FOR NAVAL ANALYSES ARLINGTON VA

An Evaluation of the GNP Deflator as a Basis for Adjusting the Allowable Price of Crude Oil.

(U)

FEB 77 56P Jondrow, James M. ; Chase, David E. ;  
REPT. NO. CRC-308

UNCLASSIFIED REPORT

DESCRIPTORS: \*Crude oil, \*Costs, Economics, Exploration, Inflation(Economics), Price index, Production, Petroleum industry

(U)

The price controls on crude oil, beginning in February 1976, allowed the average price to grow at the same rate as the GNP deflator. An additional increase up to 3% per year was also allowed. Furthermore, the two adjustments to price were limited to a total of 10% per year. The use of the GNP deflator to adjust the price of crude oil is evaluated to determine whether it compensates for changes in the prices of purchased items and labor used in the discovery and production of crude oil. A price index for these costs is constructed and compared with the GNP deflator for the period 1965 to 1976. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A036 122 5/2

STANFORD RESEARCH INST MENLO PARK CALIF

Requirements and Alternative Designs for Automating the Publication of NAVSEA MOTD at the NSDSA.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jul-30 Nov 76.  
JAN 77 152P Bialik, Jack J. ; Whiting-  
O'Keefe, Patricia ;  
REPT. NO. SRI-4739-7  
CONTRACT: N00014-76-C-0407  
PROJ: F55522  
TASK: ZF55522003

UNCLASSIFIED REPORT

DESCRIPTORS: \*Information systems, \*Information retrieval, \*Cost analysis, Manuals, Naval logistics, Naval planning, Documents, Technical information centers, Automation, Shipboard, Distribution, Production, Data storage systems, State of the art

(U)

IDENTIFIERS: Maintenance and Operator Technical Data, MOTD(Maintenance and Operator Technical Data), WU11860015, PE62757N

(U)

The United States Navy is currently in the initial phase of the Navy Technical Information Presentation Program (NTIPP), which is intended to modernize the generation, maintenance, publication, and distribution of MOTD on a Navy-wide basis. At the same time, NAVSEA, with an extremely large MOTD production requirement, is in the process of improving its own production capabilities. This report analyzes the ability of the current NSDSA publication support system (ADPREPS) to supply those requirements, and the alternative technical approaches that might be used to satisfy the NSDSA's growing requirements in the near future. The near future is defined as a period three to four years after the issuance of this report. The investigations were all placed within the context of the NTIPP. The manner in which the NSWSES publication system modernization program will be compatible with the later NTIPP developments was a major consideration.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A035 889 5/1 5/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Rate Stabilization at Navy Industrial Fund  
Research and Development Activities.

(U)

DESCRIPTIVE NOTE: Master's thesis.

DEC 76 85P Kramar, Joel David ; Solberg,  
Ernest Arnold ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Research management. \*Costs. \*Naval  
research laboratories. Accounting. Finance.  
Policies. Department of Defense. Rates.  
Stabilization. Regulations. Resource management.  
Test facilities. Indirect costs. Jobs. Labor.  
Time dependence. Naval budgets. Allocations.  
Theses

(U)

IDENTIFIERS: \*Prices. Industrial funding.  
Billing. Workloads. Overhead. Funding. In-  
house laboratories. Navy industrial fund

(U)

Recently the Assistant Secretary of Defense  
(Comptroller) directed that all DOD  
indirectly funded activities bill their customers  
on the basis of stabilized rates. Industrially-  
funded R/D activities are included in the policy  
change. This paper addresses the subject of  
stabilized rates at R/D activities - (1)  
Identifying the policy change; (2) Tracing  
its emergence in DOD; and (3) Assessing  
potential impacts. The writers conclude that  
stabilized rates are more appropriate for non-R/D  
activities than for R/D activities. However,  
stabilized rates are workable in the R/D  
environment as long as one recognizes that the R/  
D workload is essentially a level-of-effort  
concept, and as long as minimal adjustments to  
locally established rates are made at higher  
levels.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A035 823 14/1 9/2

DARCOM INTERN TRAINING CENTER TEXARKANA TEX

Computer Aided Cost Estimation for  
Production Engineers.

(U)

DESCRIPTIVE NOTE: Final rept..

MAR 76 112P Scott, Calvin Gregory ;  
REPT. NO. DARCOM-ITC-02-08-76-205

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer aided diagnosis. \*Cost  
estimates. Computer applications. Input. Research  
management. Cost analysis. Tools. Materials.  
Labor. Manufacturing. Computer programs.  
Parametric analysis

(U)

IDENTIFIERS: Trees(Mathematics)

(U)

This report develops a computer system which will  
allow an engineer to utilize the computer to aid him  
in preparing a cost estimate. Input to the programs  
is detailed information on the production process  
being analyzed. Included in the input are  
manufacturing operation times, material costs,  
tooling costs, labor costs, and various indirect fees  
associated with the manufacturing process. The  
output includes two reports. The first is a  
detailed report on each operation, and the second is  
a summary sheet summarizing the costs of an  
operation. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A035 671 14/1 13/8 19/6

ARMY ARMAMENT COMMAND ROCK ISLAND ILL COST ANALYSIS  
DIVProducibility Engineering and Planning  
(PEP). (U)DESCRIPTIVE NOTE: Technical rept..  
JAN 77 70P Riedesel, Paul R. ;  
REPT. NO. DRSAR-CPE-77-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Production  
engineering, \*Guns, Life cycle costs, Regression  
analysis, Cost analysis, Drawings, Manhours,  
Army planning, Mortars, Grenade launchers,  
Howitzers, Army operations (U)A method of estimating Producibility  
Engineering and Planning (PEP) costs for  
proposed armament systems is presented. The method  
is intended for use in the development phase of the  
life cycle of an armament system. A cost estimating  
relationship (CER) has been developed based upon  
the number of drawings for an armament system. The  
methodology of CER development as well as  
historical costs and numbers of drawings are included  
as an aid to the cost estimator. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A035 262 15/7 15/5

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLMilitary Construction Engineering and Design  
Cost Forecasts. (U)DESCRIPTIVE NOTE: Final rept..  
JAN 77 30P O'Connor, Michael J. ;  
Brown, Gerald J. ; DeCardy, John R. ;  
REPT. NO. CERL-TR-P-77  
PROJ: DA-4-A-762719-AT-05  
TASK: 4-A-762719-AT-0503

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military engineering, \*Construction,  
\*Cost models, Military facilities, Military  
planning, Cost estimates, Predictions, Statistical  
analysis (U)This report presents a statistical model for  
forecasting engineering and design (E and D)  
costs to aid the Directorate of Military  
Construction in establishing yearly targets for  
Division/District E and D rates. Data for  
nine military Construction Divisions/Districts  
from fiscal year (FY) 1966 through fiscal year 1975  
were analyzed. A statistically significant model  
for eight Districts was developed and verified by a  
retrospective test. E and D costs/rates predicted  
as a function of the estimated cost of construction  
for the eight Districts are presented for FY 76  
and FY 77. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A035 168 14/1 9/2

OFFICE OF THE COMPTROLLER OF THE ARMY WASHINGTON D C  
DIRECTORATE OF COST ANALYSIS

Army Life Cycle Cost Model; Programmer's  
Guide. Volume 11.

(U)

DESCRIPTIVE NOTE: Final rept..

JAN 76 51P Brannon, Richard C. ;  
REPT. NO. DCA-R-15-701-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A021  
900.

DESCRIPTORS: \*Life cycle costs. \*Cost models.  
\*Programming manuals. \*Cost analysis. Computer  
programs. Time sharing. Cost estimates. Weapon  
systems

(U)

Volume 1, User's Guide, describes the Army  
Life Cycle Cost Model, a time sharing cost  
model which produces both static and time phased  
parametric cost estimates for major weapons systems.  
The output reports conform to the latest Research  
and Development, Investment, and Operating and  
Support DA Pamphlets, 11-2, 11-3, 11-4.  
Program listings of the model and its associated  
report generator are contained in Volume 2.  
Programmer's Guide. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A035 091 14/1 17/7 14/4

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIO

Proceedings of the Life Cycle Cost Task  
Group of the Joint Services Data Exchange  
for Inertial Systems. Quarterly Meeting held  
at San Diego, Calif. on 24-26 February  
1976.

(U)

DESCRIPTIVE NOTE: Final rept..

FEB 76 172P Stauffer, Russell B. ;  
REPT. NO. AGVC-76-008

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs. \*Inertial systems.  
\*Reliability. Cost effectiveness. Meetings.  
Logistics support. Monte Carlo method. Design to  
cost. Transmitter receivers. Gas turbines

(U)

The proceedings contain texts and slides of invited  
papers; and reports from working groups concerned  
with programming, distribution, and change control of  
the life cycle cost model being developed by the  
Task Group.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A035 066 17/7 14/1

NAVAL WEAPONS ENGINEERING SUPPORT ACTIVITY WASHINGTON D C

A Comparison Between the AN/ARN-84 (V)  
and the AN/ARN-118 (V) TACANS. Based on the  
Life Cycle Cost.

(U)

DESCRIPTIVE NOTE: Final rept..  
NOV 76 43P Cundari, Lawrence A. ;  
REPT. NO. NAVKESA-R-7664

## UNCLASSIFIED REPORT

DESCRIPTORS: \*TACAN, \*Life cycle costs, \*AN/ARN-  
118(V), Cost analysis, Coast Guard, Air  
Force, Reliability, Cost effectiveness, Savings,  
Peacetime, Avionics, Maintenance, Distance  
measuring equipment, Navy

IDENTIFIERS: \*AN/ARN-84(V), Warranty, War  
time

TACAN (Tactical Air Navigation) equipments  
are being procured for the Navy, Coast Guard,  
and Air Force. The life-cycle costs and  
performance characteristics of different models of  
these equipments vary greatly. The two equipments  
currently being procured are the AN/ARN-84(V)  
for the Navy and Coast Guard, and the AN/  
ARN-118(V) for the Air Force. This report  
is a cost analysis based on the life cycles of these  
two equipments. It provides data intended to aid  
NAVAIR and OPNAV in making future procurements  
cost effective and responsive to both peacetime and  
war time TACAN requirements. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A034 930 12/1 5/3

CALIFORNIA UNIV LOS ANGELES DEPT OF ENGINEERING  
SYSTEMS

Lower Bounds for a Quadratic Cost  
Functional.

(U)

DESCRIPTIVE NOTE: Interim rept..  
NOV 74 10P Aronoff, Ethan ; Leondes,  
Cornelius T. ;  
CONTRACT: AF-AFOSR-2166-72  
PROJ: 9769  
TASK: 01  
MONITOR: AFOSR TR-76-1428

## UNCLASSIFIED REPORT

Availability: Pub. in International Jnl. of  
Systems Science, v7 n1 p17-25 1976.

DESCRIPTORS: \*Cost analysis, \*Control theory,  
Quadratic equations, Optimization, Parametric  
analysis, Boundaries, Hilbert space, Reprints

IDENTIFIERS: PE61102F, XUAFOSR976901

(U)

(U)

Lower bounds for a quadratic cost functional,  
applicable to certain optimal control problems, are  
derived. These bounds are tight, and are found to  
be useful in determining the quality of suboptimal  
controls. The use of a cost functional lower bound  
in the suboptimal control of a linear distributed  
parameter system is included. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A034 309 7/4

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

Dual Column Operation for Gas  
Chromatograph-Mass Spectrometer.

(U)

MAY 76 4P Kazyak, Leo ;

## UNCLASSIFIED REPORT

Availability: Pub. in Analytical Chemistry, v48  
n12 p1826-1828 Oct 76.DESCRIPTORS: \*Mass spectrometers. \*Gas  
chromatography. \*Mass spectrometry. Quinazolines.  
Capillaries. Column chromatography. Ketones.  
Metabolites. Reprints  
IDENTIFIERS: NU088

(U)

(U)

An arrangement to operate dual columns, i.e. a capillary and a packed column in a gas chromatograph-mass spectrometer is described. The packed column provides the make-up for the capillary column so that the molecular separator can be retained in the system. This affords efficient operation of both columns without extensive alteration of the equipment and eliminates the necessity to interchange columns.

(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A034 192 15/5 6/8

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Commercial Holding Cost Differential between  
Dry Storage and Controlled Cold Storage for  
Meal, Combat, Individual (MCI).

(U)

DESCRIPTIVE NOTE: Technical memo.

OCT 76 25P Yawitz, Aubrey A. ;  
REPT. NO. TRGSCCM-74-76-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military supplies. \*Food. \*Storage.  
\*Cost analysis. Cold storage. Warehouses.  
Rotation. Deterioration. Army procurement  
IDENTIFIERS: \*Dry storage

(U)

(U)

The US Army maintains war reserve stocks of Meal, Combat, Individual (MCI). These stocks are currently held in commercial cold storage warehouses. Periodically before spoilage occurs these stocks must be sent to the field for consumption. These stocks of MCI's are then replaced by new stocks. This process is called rotation. Dry storage of MCI's has been considered as an alternative to controlled cold storage. Dry storage requires more frequent rotation than does controlled cold storage, since MCI's deteriorate more rapidly under dry storage conditions. The study compares the costs involved in holding the MCI's under conditions of dry storage and controlled cold storage.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A033 972 14/2 14/1 5/9

ARMY AVIATION CENTER FORT RUMFEL ALA

Cost and Training Effectiveness Analysis  
(CTEA) of the CH-47 Flight Simulator  
(CH47FS).

(U)

DESCRIPTIVE NOTE: Study plan.  
DEC 76 44P

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Flight simulators. \*Cost  
effectiveness. \*Army training. Training devices.  
Helicopters. Operational test and evaluation.  
Methodology. Army aviation. Flight training.  
Instructional materials. Flight simulation.  
Performance(Human). Cost analysis. Skills  
IDENTIFIERS: H-47 aircraft. CH-47FS  
aircraft

(U)

(U)

The CH47FS CTEA Study Plan presents the purpose of the study and the terms of reference, including the problem statement, the objectives, scope, limits and assumptions, and the Essential Elements of Analysis (EEA). The alternative training packages selected for analysis and the Measures of Training Effectiveness (MTE) are defined. The support and resource requirements for the study are listed and control procedures and the study schedule established. Included are also the methodology for analyzing training effectiveness, the operational test plan for generating effectiveness data, and the methodology for cost analysis.

(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A033 926 9/5 14/1 17/9

ARMY ARMAMENT COMMAND ROCK ISLAND ILL SYSTEMS ANALYSIS  
DIRECTORATEBreak-Even Analysis of YADS. M163.  
Antenna Protection Device.

(U)

DESCRIPTIVE NOTE: Final note.  
JUL 76 14P Husson, Richard D. :Johnson,  
David M. :  
REPT. NO. DRSAR/SA/N-52

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Antenna components. \*Radar antennas.  
\*Protective equipment. \*Cost analysis. Life  
expectancy  
IDENTIFIERS: Break even analysis. M-163 Vulcan  
Air Defense Systems

(U)

(U)

This note presents a break-even analysis conducted to determine how much can be spent (per device) for an antenna protection device for the radar on the Vulcan M163 System. The present value of costs without a protective device was equated to the present value of estimated costs with a protective device. This analysis gives the maximum amounts that can be spent on protective devices for varying degrees of protection. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMG7

AD-A033 754 15/5

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Consolidation of RPMA at Fayetteville, N. C. Volume 1. Executive Summary for the Study of Consolidation of RPMA in the Fayetteville, N. C. Area.

(U)

DESCRIPTIVE NOTE: Final rept.,

DEC 76 30P Brown, David W. Kirby, Jeffrey G. May, Joyce L. ; REPT. NO. CERL-TR-C-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A030518.

DESCRIPTORS: \*Military facilities. \*Maintenance. \*Geographic areas. \*Cost analysis. Savings. Manpower. Economic analysis. Quality assurance. Military planning

(U)

IDENTIFIERS: Real property. Fayetteville(North Carolina). Pope Air Force Base.

Consolidation. Fort Bragg

(U)

The report provides an executive summary of the economic analysis performed to determine the feasibility of consolidating real property maintenance activities (RPMA) in the Fayetteville, NC area (Fort Bragg/Pope AFB). Results indicate that consolidation of RPMA at Fort Bragg and Pope AFB using an Army Industrial Fund Organization (AIFO) is feasible and that savings are possible based on the assumptions made in the study. Manpower reductions of 83 to 100 (6 to 8 percent) are to be expected. No loss of responsiveness or quality of work is expected. Since the savings are based on more than one military service, some of the savings, e.g., for equipment, may be realized by the Department of Defense and not entirely at the local level.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMG7

AD-A033 667 21/5 13/8 5/3

AIR FORCE CONTRACT MANAGEMENT DIV KIRTLAND AFB N MEX

A methodology for Estimating Jet Engine Costs Early in Weapon System Acquisition.

(U)

AUG 76 38P Yanke, Michael A. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models. \*Jet engines. \*Industrial production. Military procurement. Estimates. Weapon systems. Contract administration. Forecasting. Confidence level. Variables. Input output models. Statistical data. Decision making. Literature surveys. Data bases. Computer programs. Accounting. Costs

(U)

The Department of Defense (DOD) is deeply concerned about developing accurate initial estimates for weapon system production costs. An area of particular interest is providing estimates of future production costs for jet engines. Current parametric models used by the Air Force identify engine cost as a function of output variables. Other DOD agencies consider relating input variables as well as output variables to production costs. This study was designed to find a better way to estimate engine production costs. The results of this research include the following findings: (1) current Air Force cost-estimating models are operationally ineffective; (2) raw materials-related variables are highly correlated with cost and should be considered in developing future cost-estimation models; (3) statistical validation of cost models should incorporate confidence interval testing at a specified alpha level for each prediction; and (4) the use of confidence intervals is the correct statistical approach for developing cost estimates which may be used in decision making. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A033 291 5/1 14/2

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

T and E Uniform Funding Policy. An  
Appraisal of the Fiscal Year 1975  
Experience.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
MAY 76 40P Schneider, John R. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Finance, \*Test facilities, \*Costs,  
Allocations, Standardization, Policies,  
Management planning and control, Test and  
evaluation, Accounting, Budgets, Resource  
management, Ranges(Facilities), Cost  
estimates

IDENTIFIERS: Funding, Uniform funding policy,  
Direct costs, Cost reimbursements

(U)

(U)

The Department of Defense implemented a new approach to the funding of most Test and Evaluation Facilities in fiscal year 1975. The new approach was called the Test and Evaluation Uniform funding Policy. It required all federal agencies using Test and Evaluation support to fund the direct costs associated with their individual programs. This study reports a synthesis of the growing pains of the Uniform Funding Policy in the first year of implementation. Information was gathered from the experience of the Space and Missile Test Center and selected users of T/E facilities. Two major recommendations are: (1) Perform an in-depth, objective cost/benefit analysis of the Uniform Funding Policy at a representative group of T/E facilities and user organizations; and (2) Apply the costing disciplines of the SCSC to the T/E facilities.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 797 5/3 5/9

CENTER FOR NAVAL ANALYSES ARLINGTON VA

The Feasibility of a Geographic Pay  
Supplement for CONUS Military Personnel.

(U)

SEP 76 80P Warner, John T. ;  
REPT. NO. CRC-295  
CONTRACT: N00014-76-C-0509

UNCLASSIFIED REPORT

DESCRIPTORS: \*Salaries, \*Naval personnel, \*Cost  
benefits, Data bases, Housing projects, Geographic  
areas, Housing(Dwellings), Naval planning,  
Naval shore facilities, Urban areas, Rural areas,  
United States, Price index

IDENTIFIERS: Cost of living index

(U)

(U)

This report considers the feasibility and desirability of making adjustments to military pay to correct for regional variation in the cost of living in the Continental United States (CONUS). First, the adequacy of existing data bases for implementing a pay adjustment is assessed. Next, the feasibility of using cost-of-living indexes for specific items to correct for regional differences in overall living costs is explored. Then, 1975 housing expenditure data provided by the Naval Facilities Engineering Command is used to construct housing cost indexes for 118 CONUS military installations. Various ways of grouping CONUS installations for the purpose of implementing a variable housing allowance (VHA) are suggested and the costs of several alternative VHA plans are estimated. Finally, an evaluation of the arguments for and against a geographic pay adjustment is provided. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 627 5/1 1/3 5/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Aircraft Airframe Cost Estimation Utilizing a Components of Variance Model.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
OCT 76 98P Marcotte, Ronald C. ;  
REPT. NO. AFIT/GOR/SM/76D-10

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Airframes, Mathematical models, Air Force procurement, Parametric analysis, Analysis of variance, Least squares method, Components, Error analysis, Acquisition, Theses

(U)

Previous studies into airframe acquisition cost estimation do not explicitly recognize the existence of correlation in the historical data. If one believes this data problem exists, then it is possible to develop a components of variance model that takes the problem into account. It is a more general model that recognizes two sources of error: (1) error due to different types of airframes and (2) overall or ordinary regression error. The variance of these two errors can be estimated and then can be utilized along with the technique of generalized least squares to obtain a cost estimating relationship which explicitly accounts for the data correlation. This modeling technique, when compared to techniques presently in service, shows that present estimating relationships underestimate the variance of the cost prediction of a new type airframe and overestimate the variance of the cost prediction of a follow-on airframe. Also, those existing techniques which implicitly recognize data correlation do not make use of all the data information available and therefore produce estimates with poor confidence prediction intervals.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 499 5/1 9/2

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Life Cycle Management of Army Tactical Management Information Systems (TACMIS).

(U)

DESCRIPTIVE NOTE: Study project rept..  
MAY 76 27P Ward, Mack C. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Management information systems, \*Cost models, \*Tactical data systems, Life cycles, Data processing, Automatic, Decision making, Computers

(U)

The purpose of this study is to examine the life cycle management of Army Tactical Management Information Systems with particular emphasis on integration of the requirements of the life cycle System Management Model (LCSMM) for Army Systems, DA Pam 11-25, and the Army Management Information System (AMIS) AR 18-1. Considerable attention, both in the literature and in practice, has been given to the systems acquisition process for inception through development into production. The principal thrust of this attention, however, has been directed towards RDT and E and acquisition of weapons systems to counter a perceived threat. This study focuses on areas in the present AMIS Model that appear to be weak and attempts to correlate some of the more significant activities and documentation requirements with the LCSMM. The end result of this effort is the determination of the feasibility of developing a single Army TACMIS model with the detail of the LCSMM. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 458 15/5 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSThe Magnitude of Internal Rework on the F-4  
Aircraft during Depot Level Maintenance at  
Ogden Air Logistics Center.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 76 85P Berry, John B. ; Hines,  
Raymond M. ;  
REPT. NO. SLSR-11-768

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft maintenance, \*Costs,  
\*Maintenance management, Air Force planning,  
Depots, Value engineering, Quality assurance,  
Methodology, Theses, Jet fighters  
IDENTIFIERS: F-4 aircraft

(U)  
(U)

In May 1975, Mr. J. Turk, Office of the  
Secretary of Defense, expressed a desire to  
estimate the magnitude of rework cost within AFLC  
to determine if it was of sufficient magnitude to  
warrant special attention in all services. Ogden  
ALC was selected as a test area for this research.  
The primary objectives of the research were:  
(1) determine the magnitude of rework cost for  
the F-4 aircraft during depot level maintenance,  
(2) identify the major areas of rework, their  
primary causes, and their cost magnitudes, (3)  
develop a standard methodology for identifying and  
classifying rework in terms of maintenance areas,  
causes, and cost magnitudes, and (4) stimulate  
interest for conduct of similar research at other  
ALCs and TRCs with the major emphasis on reducing  
rework cost. (Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 274 1/2 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERINGA Logistics Support Cost Analysis of the  
Advanced Aerial Refueling Boom.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 76 234P Jeffreys, Richard T. ; Sears,  
Carver L. ;  
REPT. NO. AFIT/GSM/SM/76S-13

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Refueling in flight,  
\*Booms(Equipment), \*Cost analysis, Computer  
programs, Logistics support, Models, Tanker  
planes, Life cycle costs, Computerized simulation,  
Theses  
IDENTIFIERS: KC-135 aircraft

(U)  
(U)

Under an Air Force contract, Douglas  
Aircraft Company is developing an Advanced  
Aerial Refueling Boom (AARB) for the  
Advanced Tanker/Cargo Aircraft System  
Program Office (ATCA SPD). The purpose of  
the AARB development program is to demonstrate that  
an advanced technology boom system, which will  
eliminate some of the limitations of the existing  
KC-135 boom, can be designed and successfully  
flown. To date, development of the AARB has been  
mainly oriented toward performance--meeting the  
design requirements. The ATCA SPD now desires  
to examine the costs of supporting the proposed  
design, if it is produced. This thesis is directed  
toward identifying the differential logistics support  
costs of the AARB. The Boom Model, a tailored  
version of the Air Force Logistics Command  
Logistics Support Cost (LSC) Model, is used  
to develop the logistics support cost figure of merit  
for the proposed AARB. The Boom Model is also  
used to develop a similar figure of merit for the  
existing KC-135 boom. The values for variables  
used in the KC-135 boom analysis are obtained from  
existing Air Force maintenance data collection  
systems. A methodology for extracting data from  
these systems is given.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 220 6/5 14/1

RAND CORP SANTA MONICA CALIF

Health Care Cost Sharing and Cost Containment.

(U)

FEB 76 32P Newhouse, Joseph P. :  
REPT. NO. P-5615

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Errata sheet inserted.

DESCRIPTORS: \*Public health, \*Health surveys.  
\*Cost analysis, Cost effectiveness, Insurance,  
Health care facilities, Costs, Medical services,  
Sharing, Hospitalizations

(U)

IDENTIFIERS: Cost sharing, Health maintenance  
organization

(U)

If cost sharing is not included in a national health insurance plan, little additional demand is likely to be generated for hospital services. By contrast, substantial demand will be generated for other services, such as physician office visits. This demand increase will probably be spread across all income classes, not concentrated among the poor. Large demand increases will cause services to be rationed. Exactly what the mechanisms for rationing will be is uncertain, but at least some of them would be considered undesirable. Therefore, if it is desired to eliminate cost sharing, a planned gradual phasing out of an initial deductible for the nonpoor appears attractive.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 202 17/2.1 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERINGDemonstration of a Logistics Support Cost  
Model for Stage III of the Digital European  
Backbone Program.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 76 130P Rose, Galen J. :  
REPT. NO. AFIT/GSM/SN/76S-22

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Communication and radio systems.  
\*Logistics support, \*Cost models, \*Life cycle  
costs, Radio equipment, Digital systems, Frequency  
modulation, Theses

(U)

IDENTIFIERS: Digital European Backbone  
project

(U)

This study provides a cost-based methodology for comparing alternative fixed ground communications radios. The study develops and demonstrates a life cycle logistics support cost model representing relevant initial investment costs and recurring maintenance and supply support costs. The scope of the study addresses only Stage 3 of the Digital European Backbone Upgrade Project. The cost model developed is an accounting model that aggregates the cost of thirteen separate cost element equations and requires 54 input data values. This methodology provides a systematic approach to estimating the relevant costs of proposed equipment options over their expected usage period. The model yields estimated cost results that indicate relative cost magnitudes and relative cost differential comparisons as figures of merit between equipment alternatives. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 071 5/1 14/1 13/8 5/3

FLORIDA UNIV GAINESVILLE DEPT OF INDUSTRIAL AND SYSTEMS  
ENGINEERINGPermutation Type Schedules on a Single  
Machine under Cost Criteria.

(U)

DESCRIPTIVE NOTE: Research rept..

JUL 76 21P Sivazlian, B. D. ;

REPT. NO. RR-76-17

CONTRACT: DAHC04-75-G-0150, AF-AFOSR-76-2605-76

PROJ: 20061102A140

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Job shop scheduling, \*Cost analysis,  
\*Sequences, \*Machine shop practice, \*Industrial  
production, Systems engineering, Processing,  
Degradation, Test and evaluation, Modular  
construction, Test equipment, Electronic  
equipment

(U)

IDENTIFIERS: Deferral costs, Discounted costs,  
Overhead costs, Fault detection, AS:4D.

(U)

PE61102A

Optimal permutation type schedules are obtained for a class of  $n$  jobs one machine type problems using as criteria i. the total processing cost, ii. the total deferral cost, and iii. the total processing and deferral cost. The set of seven models developed include cases when the machine deteriorates with usage, and when resetting of the machine is possible at the completion of each job. Particular attention is devoted to accounting for the time value of money, an important factor in the case of large tasks extending over prolonged periods of time such as construction projects. Use is made of a theorem in underlying the structural equivalence of all the models considered. Finally, an application related to a modular configuration is discussed.

(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A032 061 5/1 5/3 14/1 13/8

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

An Analysis of the Need for Industrial  
Engineering Capability in Production at  
Electronic Systems Division.

(U)

DESCRIPTIVE NOTE: Study project rept..

NOV 74 48P Hardaway, Charles Edward ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Industrial engineering, \*Design to  
cost, \*Industrial production, Cost analysis,  
Materiel, Careers, Production control

(U)

IDENTIFIERS: Career management, Cost Control

(U)

This study examines the need for industrial engineering capability within production at Electronic Systems Division (ESD). Production is looked at from World War II to the present time to show why production management is perceived today by many program managers and high level functional manager as only the classical production management techniques of tracking, monitoring and expediting deliverables. The current emphasis on cost is then examined to show why this classical approach is no longer a viable approach to production management. It is shown that production management must include close interface between industrial engineering and design engineers to make early determination of producibility and manufacturing feasibility when the design is most flexible and trade-offs are least costly. ESD is analyzed to determine if the production management functions within the Deputates have appropriate engineering capability to perform these functions. Factors causing resistance to obtaining industrial engineering capability in program production offices are discussed with a recommended plan for overcoming these resistance factors. This study was accomplished by document research and interviews of key personnel involved in DOD acquisition. It shows that more engineering capability is required in the production functions of ESD.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A031 843 13/13 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

A General Warehouse Module Conceptual Design and Cost Analysis. Volume I. Executive Summary.

(U)

DESCRIPTIVE NOTE: Facility systems integration design study.

SEP 76 38P Alexander, Roland T. ;

Carmichael, Terence J. ; Craig, William A. ;

High, John T. ; Inouye, Don M. ;

REPT. NO. AFIT/GCE/MC/76S-1-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A031 384.

DESCRIPTORS: \*Warehouses. \*Modular construction. \*Logistics planning. \*Life cycle costs. \*Structural engineering. Frames. Pile structures. Steel. Fire prevention. Cost analysis. Energy. Electrical engineering. Refrigeration systems. Heating. Theses. Cements. Foundations (Structures)

(U)

The conceptual development and design of a general warehouse module for the Norfolk, Virginia area was accomplished. A life cycle cost analysis was made to furnish the Department of Defense with information to be used in a study of the service's material distribution system. The design embraced civil, mechanical, and electrical engineering aspects of the facility. Various structural schemes were investigated with regard to feasibility and flexibility within a range of building heights from 30 to 60 feet. Alternative methods of satisfying energy requirements were analyzed with the aim of maintaining specified internal environmental conditions and accommodating anticipated electrical loads. Design of an associated electrical distribution network and lighting system were included. A comprehensive discussion of fire protection considerations is also presented. The design results and economic analysis indicate: (1) a braced frame steel structure is the most cost effective structural plan.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A031 839 20/6 14/1 17/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Life Cycle Costing of an Emerging Technology: The Fiber Optics Case.

(U)

DESCRIPTIVE NOTE: Final Rept. Mar 75-Mar 76.

MAR 76 442P Jones, Carl R. ; Johnson,

Ronald L. ; Knobloch, Earle W. ; McGrath, John

M. ; Michna, Kenneth R. ;

REPT. NO. NPS-55Js76031

UNCLASSIFIED REPORT

DESCRIPTORS: \*Fiber optics. \*Life cycle costs. \*Optical communications. \*Fiber optics transmission lines. Electrooptics. Optical waveguides. Data links. Cost effectiveness. Cost estimates. Cost models. Data transmission systems. Economic analysis

(U)

IDENTIFIERS: A-7 aircraft. ALOFT (Airborne light optical fiber technology). Airborne light optical fiber technology. Optical fibers

(U)

As significant technological advances in fiber optics and optical data transmission methods are being made, it is necessary to develop appropriate methods for estimating life cycle costs for alternative coaxial/twisted pair wire and optical fiber avionics. In Volume One measures of effectiveness are suggested for each alternative system. An approach, which structures the technological and demand uncertainties of fiber optics, is developed through scenarios as a means of relating cost and effectiveness. It is suggested that Delphi and experience curve techniques be used in conjunction with ordered scenarios as a technological forecasting technique for estimation of life cycle costs of fiber optics. In addition, a review of the historical and technological background of fiber optics and their application to the Naval Electronics Laboratory Center (NELC) A-7 Airborne Light Optical Fiber Technology (ALOFT) Program is included. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A031 770 17/7

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIO

Proceedings of the Life Cycle Cost Task  
Group of the Joint Services Data Exchange  
for Inertial Systems Quarterly Meeting  
(6th) Held at St. Petersburg, Florida, on  
25-27 February 1975.

(U)

DESCRIPTIVE NOTE: Final rept.,  
FEB 75 222P Stauffer, Russell B. ;  
REPT. NO. AGMC-76-007

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycles, \*Cost analysis,  
\*Inertial systems, \*Meetings, \*Inertial  
navigation, Costs, Budgets, Logistics, Design to  
cost, Joint military activities, Maintenance,  
Spare parts, Management planning and control,  
Acquisition, Economics,  
Reliability(Electronics)

(U)

These proceedings describe the activities of the  
sixth quarterly meeting of the Life Cycle Cost  
Task Group of the Joint Services Data  
Exchange for Inertial Systems held 25 - 27  
February 1975 in St. Petersburg, Florida.  
The proceedings contain the texts and slides  
(where available) of the invited papers and the  
results of sub-group meetings on creation of an LCC  
Task Group descriptive paper and preparation of  
input/output specifications and finalization of  
variable names for the LCC model under development.  
(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A031 384 13/2 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERING

A General warehouse Module Conceptual  
Design and Cost Analysis, Volume II.  
Main Text and Appendices.

(U)

DESCRIPTIVE NOTE: Facility systems integration design  
study.

SEP 76 701P Alexander, Roland T. ;  
Carmichael, Teren J. ; Craig, William A. ;  
High, John T. ; Inouye, Don M. ;  
REPT. NO. AFIT/GCE/4C/765-1-VOL-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A031 043.  
Master's thesis.

DESCRIPTORS: \*Warehouses, \*Logistics, \*Modular  
construction, \*Cost analysis, Frames, Pile  
structures, Steel, Fire prevention, Refrigeration  
systems, Electric power distribution, Life cycle  
costs, Theses

(U)

IDENTIFIERS: Tilt slab walls, Sodium vapor  
lamps

(U)

The conceptual development and design of a general  
warehouse module for the Norfolk, Virginia area  
was accomplished. A life cycle cost analysis was  
made to furnish the Department of Defense with  
information to be used in a study of the Service's  
material distribution system. The design embraced  
civil, mechanical, and electrical engineering aspects  
of the facility. Various structural schemes were  
investigated with regard to feasibility and  
flexibility within a range of building heights from  
30 to 60 feet. Alternative methods of satisfying  
energy requirements were analyzed with the aim of  
maintaining specified internal environmental  
conditions and accommodating anticipated electrical  
loads. Design of an associated electrical  
distribution network and lighting system were  
included. A comprehensive discussion of fire  
protection considerations is also presented. The  
design results and economic analysis indicate:  
(1) a braced frame steel structure is the most  
cost effective structural plan.

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AD-A031 384

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 788 14/1 21/5

TELEDYNE CAE TOLEDO OHIO

Engine Systems Ownership Cost Reduction -  
Aircraft Propulsion Subsystems Integration  
(APSI).

(U)

DESCRIPTIVE NOTE: Final rept. Apr 73-Aug 75  
AUG 75 154P Wagner, William ; Gabrys,  
Alfred ; Knight, Wesley ;  
REPT. NO. TCAE-1467-Vol-2  
CONTRACT: F33657-73-C-0620  
PROJ: AF-668A  
TASK: 1  
MONITOR: AFAPL TR-75-100-Vol-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-C004  
839L.

DESCRIPTORS: \*Life cycle costs, \*Turbofan engines,  
\*Cost analysis, \*Gas turbines, \*Design to cost,  
\*Savings, Low costs, Air Force procurement,  
Cost benefits, Airframes, Interfaces, Integrated  
systems

IDENTIFIERS: Cost of ownership, Aircraft  
propulsion

(U)

(U)

This report summarizes Teledyne CAE's  
experience and conclusions in developing reduced-cost  
adaptive components, airframe interface requirements,  
and integrated systems plans under the AFAPL-  
sponsored Aircraft Propulsion Subsystem  
Integration (APSI) program. The APSI program  
is directed to evolving the Teledyne CAE Model  
555 ATEGG into a turbofan Joint Technology  
Demonstrator Engine (JTDE). Reduced cost of  
engine ownership is one major objective of the APSI  
program. It was, therefore, deemed advisable to  
summarize that task into this document. Section 2.0  
of this report provides an overview of engine  
ownership costs, as perceived and evaluated by  
Teledyne CAE, in accomplishing APSI-program  
tasks. Section 3.0 describes the application of the  
cost reducing methodology, including the results of  
iterating the baseline and scaled engines and  
applying Design-to-Cost (DTC) methods during  
their design. Section 4.0 advances 18 specific cost  
reduction topics.

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AD-A030 782

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 782 15/5 14/1 13/10 5/2

OFFICE OF THE CHIEF OF NAVAL OPERATIONS WASHINGTON D C

Visibility and Management of Support Costs -  
Ships (ZAWOSC II).

(U)

DESCRIPTIVE NOTE: Final rept. for Oct 75-Sep 76.  
SEP 76 225P Anderson, Joseph F. ; Rogin,  
Leo ; Flynn, John J. ; Cook, Russell A. ;  
Richter, Ronald P. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A008 334.

DESCRIPTORS: \*Logistics support, \*Naval vessels,  
\*Naval logistics, \*Weapon systems, \*Management  
information systems, \*Logistics management, \*Cost  
analysis, Maintenance, Cost effectiveness, Costs,  
Resource management, Data bases, Life cycle costs,  
Naval training, Naval personnel

(U)

IDENTIFIERS: TSS(Total support systems), Total  
support systems, MBO(Management by objective),  
Management by objective, O and S(Operating and  
support) costs, Operating and support costs, 3M  
systems, Fleet modernization program, Expendable  
stores costs

(U)

Weapon System O and S costs often exceed  
acquisition costs and a need has been identified to  
provide an O and S cost display for control at  
the weapon system and equipment managerial levels.  
This study details the method for collecting  
detailed O and S costs for ships from existing  
Navy data systems, highlights the improvements  
necessary to collect full ship O and S costs,  
presents estimated costs, schedules, and the  
management organization for implementing an MIS to  
display these costs, and provides a sample MIS  
product for six ships. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 763 15/5 14/1 1/3 13/10

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

A Comparative Analysis of the Relationships  
of Total Distribution Costs between Airlift  
and Sealift.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JAN 74 115P Boudreaux, Lionel A.; Cooper,

Thomas J. ;

REPT. NO. SLSR-4-74A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Airlift operations, \*Cost analysis,  
\*Logistics planning, \*Sea traffic, Logistics  
support, Personnel management, Salaries,  
Distribution

(U)

IDENTIFIERS: \*Sealift operations

(U)

Airlift and sealift are provided for the  
Department of Defense (DoD) by the Military  
Airlift Command (MAC) and the Military  
Sealift Command (MSC) respectively.  
Transportation services are paid for by the user  
through separate industrial funds. A comparison of  
the costing criteria used by each agency to establish  
tariffs, showing the relationship to user  
requirements, provides a foundation for measuring  
true DoD transportation costs. In order to  
make recommendations which would strengthen the  
compatibility of the tariff structures, a comparative  
analysis was made of the costing criteria presently  
used. The primary recommendations are: (1)  
Separate and exclude the training costs resulting  
from maintaining the strategic mobility policy;  
(2) Include the costs incurred at ocean  
terminals; (3) Exclude the cost of MSC  
project ships; (4) Include the pay of both  
civilians and military employees; and (5)  
Continue the use of the industrial fund concept.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 716 14/1 12/1 15/5

AIR FORCE ACADEMY COLO

The Use of Statistical Sampling in Contract  
Pricing.

(U)

DESCRIPTIVE NOTE: Final rept..

AUG 76 28P Helmer, F. Theodore ; Utter,

Harry ;

REPT. NO. USAFA-TR-76-17

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Air Force  
procurement, \*Contract proposals, \*Statistical  
samples, \*Statistical analysis, Contracts, Data  
bases, Cost models, Sampling

(U)

IDENTIFIERS: \*Price analysis, Backlogs

(U)

This report provides the reader with the results of  
a study on the use of statistical sampling techniques  
on pricing cases in one Air Force Plant  
Representatives Office (AFPRO). The study  
reveals that 38% of the AFPRO pricing workload is  
devoted to 1-1/2% of the contractual dollars and  
that 77% of the workload is devoted to 11% of the  
dollars proposed.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 649 12/2 12/1 14/1

STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH

A Theory for Semi-Markov Decision Processes with Unbounded Costs and Its Application to the Optimal Control of Queueing Systems.

(U)

DESCRIPTIVE NOTE: Technical rept.,

AUG 76 82P Orkenyi, Peter ;

REPT. NO. TR-64

CONTRACT: N00014-76-C-0418, NSF-Eng-75-14847

PROJ: NR-047-061

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Decision theory, \*Cost analysis, \*Markov processes, \*Queueing theory, Optimization, Costs

(U)

IDENTIFIERS: \*Semi-Markov decision processes

(U)

Semi-Markov decision processes with countable state and action spaces are investigated. The optimality criteria considered are the average cost criterion, the undiscounted cost criterion, and the discounted cost criterion. The common assumption of bounded costs has been replaced by some considerably weaker conditions. In particular, our assumptions are weaker than those made by Harrison, Hordijk, Lippman and Reed when they considered the same problem. The existence of optimal, stationary optimal and stationary E-optimal policies is investigated. Policy improvement is considered. Necessary and sufficient conditions for the optimality of a policy are given. Then the optimal control of queueing systems is considered by formulating this general problem as a semi-Markov decision process. Finally, four different ways of proving the optimality of an unimprovable policy are developed in the context of queueing systems.

(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 646 12/2 12/1 14/1

STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH

Optimal Control of the M/G/1 Queueing System with Removable Server-Linear and Non-Linear Holding Cost Function.

(U)

DESCRIPTIVE NOTE: Technical rept.,

AUG 75 102P Orkenyi, Peter ;

REPT. NO. TR-65

CONTRACT: N00014-76-C-0418, NSF-Eng-75-14847

PROJ: NR-047-061

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Queueing theory, \*Cost analysis, \*Decision theory, Utilization, Costs, Computers, Time sharing, Optimization, Policies, Time

(U)

IDENTIFIERS: \*Cost functions, Idle time utilizations, Removable server, \*Semi-Markov decision processes

(U)

This report considers the M/G/1 queueing system with removable server. The cases of linear and non-linear customer holding cost functions are both considered. Non-instantaneous start-up times are allowed. The problem is to find an optimal policy for turning the server on and off. The optimality criteria considered are the average cost criterion, the undiscounted cost criterion and the discounted cost criterion. A certain class of simple policies, the hysteretic policies, is considered. Natural hysteretic policies and non-degenerate hysteretic policies are introduced. It is shown that there is a natural hysteretic policy which is average optimal, and that if the start-up times are instantaneous or the holding cost function convex, then there is a natural hysteretic policy which is undiscounted optimal. When discounting is used, the results are not as strong, except for the case where the holding cost function is linear. For the non-linear case we still obtain certain fairly weak sufficient conditions for a natural hysteretic policy to be optimal. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 554 14/1 15/3 15/5

MARTIN MARIETTA AEROSPACE ORLANDO FLA TECHNICAL  
INFORMATION CENTERLife-Cycle Costing. A Selected  
Bibliography.

(U)

OCT 76 28P McClure, Lucille ;  
REPT. NO. RB-330-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs. \*Defense systems.  
\*Weapon systems. \*Data bases. \*Military  
procurement. Accounting. Finance. Cost estimates.  
Data bases. Economic models. Reliability  
IDENTIFIERS: Record keeping. Financial  
control

(U)

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Life-Cycle Costing is a Department of  
Defense management concept that is applied in  
estimating costs during the acquisition of complete  
defense systems. The concept of Life-Cycle  
Costing has been around for several years. A  
great many of these years has been spent on bringing  
together policy, procurement, record keeping,  
financial control, and reliability cost estimates.  
The Air Force has made the greatest use of this  
concept but usually on small contracts. Only  
recently has Life-Cycle Costing become a prime  
consideration for all of the Armed Services.  
The main problem, particularly in estimating costs  
of undefined weapon systems, was the lack of a data  
base. The few attempts made in collecting data  
became so cumbersome that the sheer volume was  
uncontrollable. Several hundred Life-Cycle  
Cost models have been introduced but the cost  
estimates remained unrealistic. To overcome this  
problem, the Department of Defense has started a  
data base collection and storage system on the  
operating and support costs of some of the major  
weapon systems. This data base should help  
estimators in establishing trade-offs and projecting  
more realistic cost goals.

(U)

AD-AJ30 554

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 548 21/5 14/1 15/5

NAVAL AIR DEVELOPMENT CENTER WARMINSTER PA

Proceedings of OSD Aircraft Engine Design  
and Life Cycle Cost Seminar. Held at  
Naval Air Development Center Warminster,  
Pennsylvania November 19, 20, and 21, 1975.

(U)

NOV 75 473P Dienemann, Paul F. ; Birkler,  
J. ; Pressman, A. ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft engines. \*Life cycle costs.  
\*Military procurement. Seminars. Gas turbines.  
Cost estimates  
IDENTIFIERS: Design

(U)

(U)

The objective of the seminar on aircraft engine  
design and life cycle cost was to provide a forum and  
opportunity for government and industry  
representatives to exchange ideas and information  
about reducing costs of both current and future  
turbine engine programs.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 519 5/1 15/5 5/3

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Consolidation of RPMA at Fayetteville, NC.  
Volume III. Cost Analysis Support and  
Backup Data for the Consolidation of RPMA in  
the Fayetteville, NC Area.

(U)

DESCRIPTIVE NOTE: Final rept.,

SEP 76 380P Brown, D. W. ; Kirby, J. G.

; Nay, J. L. ;

REPT. NO. CERL-TR-C-73-Vol-3

PROJ: CERL-75-5

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 4, AD-A041 331.

DESCRIPTORS: \*Maintenance management, \*Cost  
analysis, \*Integrated systems, \*Army planning,  
\*Cost effectiveness, \*Army operations, Economic  
analysis, Data acquisition, Army budgets

(U)

IDENTIFIERS: RPMA (Real Property Maintenance  
Activities), \*Real property maintenance  
activities, \*Army industrial fund organization,  
Consolidation

(U)

This report presents the cost analysis support and  
the backup economic data used by the U.S. Army  
Construction Engineering Research  
Laboratory's (CERL) rpma Study Team to  
evaluate the feasibility of consolidating real  
property maintenance activities (RPMA) at Fort  
Bragg and Pope AFB, NC. Included are the  
research study plan, the Army Industrial Fund  
description and cash flow procedures, the legal  
analysis for consolidation actions, general concept  
of the Army Industrial Fund Organization, an  
analysis of the fiscal year (FY) 75 current method  
of operation and the proposed consolidation,  
implementation costs, and an environmental impact  
assessment. (Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 518 5/1 15/5

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Consolidation of RPMA at Fayetteville, NC.  
Volume II. Summary Cost Analysis for  
Consolidation of RPMA in the Fayetteville, NC  
Area.

(U)

DESCRIPTIVE NOTE: Final rept.,

SEP 76 81P Brown, D. W. ; Kirby, J. G.

; Nay, J. L. ;

REPT. NO. CERL-TR-C-73-Vol-2

PROJ: CERL-75-5

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, AD-A030 519.

DESCRIPTORS: \*Maintenance management, \*Cost  
analysis, \*Army planning, \*Integrated systems,  
\*Cost effectiveness, \*Army operations, Economic  
analysis, Data acquisition, Army budgets

(U)

IDENTIFIERS: RPMA (Real Property Maintenance  
Activities), \*Real property maintenance  
activities, Army industrial fund organization,  
Consolidation

(U)

This report summarizes the results of an economic  
analysis performed to determine the feasibility of  
consolidating real property maintenance activities  
(RPMA) in the Fayetteville, NC area (Fort  
Bragg/Pope AFB). Results indicate that  
consolidation of RPMA at Fort Bragg and Pope  
AFB using an Army Industrial Fund  
Organization is feasible and economically  
desirable. Based on the actual fiscal year (FY)  
75 workload, the consolidated organization could  
generate savings of between \$814,000 (2 percent  
of combined FY 75 cost) and \$1,184,000 (3  
percent of combined FY 75 cost). Manpower  
reductions of 83 to 100 (6 to 8 percent) are to  
be expected. No loss of responsiveness or quality  
of work is expected. The new implementation costs  
of \$718,000 should be recoverable within the first  
year of operation. (Author)

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AD-A030 518

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 508 9/2 17/2 14/1

COMPUTER SCIENCES CORP FALLS CHURCH VA

NSW GCOS Connection.

(U)

DESCRIPTIVE NOTE: Interim rept. 22 Mar-12 Jun 76.  
JUL 76 94P Grimes, Robert J. ;

CONTRACT: F30602-76-C-0199

PROJ: AF-5550

TASK: 555009

MONITOR: RADC TR-76-228

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer communications.  
\*Communications networks. \*Computer program  
documentation. \*Computer files. \*Cost benefits.  
Computer programs. Interfaces. Savings. Access.  
Digital computers. User needs  
IDENTIFIERS: \*Computer Software. Host  
computers

(U)

(U)

This report provides a detailed examination of four specific alternatives providing an interface between the Honeywell H6180 (GCOS) and the ARPANET. The ultimate goal is to allow the H6180 to participate in the National Software Works (NSW) as a Tool Bearing Host (TBH). A configuration consisting of the H6180, Asynchronous Bit Serial Interface (ABSI), a PDP-11 operating as a network front-end (NFE) and the network IMP comprised the best alternative. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 348 5/9 5/3

DEPUTY CHIEF OF STAFF FOR PERSONNEL (ARMY) WASHINGTON D C

Review of Permanent Change of Station  
Travel Entitlements.

(U)

DESCRIPTIVE NOTE: Final rept. 20 May-30 Jul 76.

JUL 76 116P Seelig, Louis C. ; Frost,  
Stanford J. ; Schneider, Daniel M. ; Sestric,  
Joseph L. ;

## UNCLASSIFIED REPORT

Availability: Microfilm copies only.  
SUPPLEMENTARY NOTE: Prepared in cooperation with the  
Departments of the Air Force, Navy and Marine  
Corps.

DESCRIPTORS: \*Military personnel. \*Transfer. \*Cost  
analysis. Rates. Military dependents. Policies.  
Transportation. Personnel management. Military  
law. Standards. Assessment. Reviews  
IDENTIFIERS: Change of stations. Travel  
allowances

(U)

(U)

The purpose of the review was to determine the appropriate method and amount of payment which should be paid to members of the Uniformed Service, when ordered to make a change in permanent duty station. The scope of the review was not limited to the individual service member, but included the impact on the dependents of the member transported on permanent change of station orders. The review was limited to moves within the continental limits of the United States. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOW07

AD-A030 296 13/6 5/3 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

The Feasibility of a Fare Bus System for  
Work-Commuting at Wright-Patterson AFB,  
Ohio.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 76 111P Shumway, Thomas R. ; Tonjes,  
Earl A. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Passenger vehicles. \*Cost  
effectiveness. \*Routing. \*Rates. Optimization.  
Cost estimates. Air Force planning. Feasibility  
studies. Theses

IDENTIFIERS: Bus fares. Mass transit. Fares.  
Commuting. Convenience. Wright-Patterson Air  
Force Base

(U)

(U)

The purpose of the thesis was to determine the  
feasibility of a bus system charging a fare for work-  
commuting and to determine whether frequency,  
convenience, and travel time preferences varied in  
importance in the population. A questionnaire was  
used to survey military residents of Wright-  
Patterson AFB housing areas. Varying levels of  
demand and revenue were computed based on survey  
information. An example route was devised for  
purposes of analysis. The authors found that a  
subsidy would be required for a work-computer system.  
Benefits from mass transit were presented for use  
by managers deciding on the feasibility of  
establishing a work-computer system. Chi-Square  
One-Sample and Kruskal-Wallis One-way  
Analysis of Variance tests were used to determine  
the rank order importance of frequency, convenience,  
and travel time. The test revealed that the  
population was indifferent to the three factors.  
(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOW07

AD-A030 240 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

The Accuracy of Air Force Weapon System  
Cost Estimates as a Function of Time.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 76 153P McLeod, Hugh S. ; Ill:  
Phillips, Jeffrey J. ;  
REPT. NO. SLSR-5-76A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost effectiveness. Cost estimates.  
Weapon system effectiveness. Contract  
administration. Department of Defense.  
Negotiations. Network analysis (Management).  
Linear regression analyses. Time studies. Accur

(U)

Repeated experiences with unrealistic system  
acquisition cost estimates made by defense  
contractors and the Department of Defense have  
seriously undermined the willingness of Congress  
and the general public to fully support current and  
new acquisition programs. To facilitate retaining  
this support for defense programs, improvement in the  
accuracy of acquisition cost estimates is needed.  
In attempting to identify the factors that  
influence the accuracy of these cost estimates, this  
study is focused on the relationships between the  
accuracy of activity-cost estimates and three  
factors--the estimate's distance from the activity  
start date, the project start date, and the magnitude  
of the activity cost. Four accuracy measures were  
used: the magnitude and direction of the estimate  
error expressed as a percentage of the activity-cost,  
the absolute value of this error, the magnitude and  
direction of the estimate error expressed as a dollar  
value, and the absolute value of this error. The  
data base consisted of 282 cost estimates for eighty-  
nine activities. A strong relationship was found  
between accuracy and the magnitude of activity cost.  
Weaker relationships were found between accuracy  
and the estimate's distance from both the activity  
start date and the project start date. (Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 239 15/5 14/1 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

A Taxonomy of Cost Estimating Characteristics as Applied to an Aircraft Replenishment Spares Model.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
JUN 76 206P Nelson, Eric E. ; Smith,  
William E. ;  
REPT. NO. SLSR-01-76-A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Air Force procurement, \*Air Force budgets, Air Force Logistics Command, Theses, Weapon systems, Replenishment, Investments, Aircraft, Uncertainty, Taxonomy

(U)

IDENTIFIERS: Replenishment Investment spares

(U)

Department of Defense cost estimation requires improvement, particularly as it applies to budgetary estimates for major weapon system acquisitions. This research explores ways of improving cost estimating methodology by the development of a taxonomy of cost estimating characteristics which may be used as a guide in constructing and evaluating cost estimating models. Such a guide was developed on a framework of systems theory and applied to the construction of a conceptual model designed to estimate replenishment investment spares budgetary requirements for the Air Force Logistics Command (AFLC) in support of major weapon systems acquisitions. The taxonomy of cost estimating characteristics was then used to evaluate the conceptual model and the present AFLC replenishment investment spares model. The research demonstrated the usefulness of a taxonomy of cost estimating characteristics and concluded that budgetary estimates for replenishment investment spares could be improved. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 217 9/2 14/1 15/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

The Effects of Developmental Software on the Acquisition Management of Aeronautical Computer systems.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
JUN 76 127P Marshall, James R. ; Chapman,  
Craig E. ;  
REPT. NO. SLSR-13-76A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer program documentation, \*Computer programs, \*Cost analysis, \*Weapon systems, Computers, Air Force procurement, Interfaces, Validation, State of the art, Scheduling, Theses

(U)

IDENTIFIERS: \*Computer software, Cost overruns

(U)

The purpose of this research was to determine if the developmental software aspect of aeronautical computer system acquisitions was the cause of program cost overruns and schedule extensions. The hypothesis was that developmental software does cause program cost and schedule overruns. A structured interview was used to obtain data concerning three variable characteristics of developmental software: software documentation, software design and interface requirements, and software testing (validation and verification). A census of all on-going programs at Aeronautical System Division, Wright-Patterson AFB, Ohio, as of 1 January 1976, was performed. Criteria tests on the correlation of data with program cost and schedule changes was conducted to establish support for the hypothesis. The hypothesis could not be supported. Additional analysis coupled with observations compiled during the interviews indicated that it may not be the case that aeronautical weapon system acquisitions are being approached from a total system point of view, but rather that subsystems are being optimized to the detriment of the total weapon system acquisition. The authors feel that this suboptimization is a contributing cause to cost overruns and schedule extensions.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 162 9/2 14/1 15/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

An Exploratory Study of Software Cost Estimating at the Electronic Systems Division.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
JUL 76 60P Devenny, Thomas J. ;  
REPT. NO. GSM/SM/76S-4

UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer program documentation, \*Cost estimates, \*Computer programs, \*Weapon systems, Computer programming, Decision making, State of the art, Performance, Costs, Command and Control systems, Research management, Theses  
IDENTIFIERS: \*Computer Software

(U)

(U)

The estimate of software development cost is the key piece of information in many software management decisions. No technique exists which can consistently produce the reliable and accurate cost estimates which managers need. This thesis research effort explored the software cost estimating process at the Electronic Systems Division of the Air Force Systems Command. The purpose of the research was to provide managers, researchers, and cost estimators with a better insight into the cost estimating process. Data were gathered from 16 major software acquisitions at ESD using both a structured interview and contractor furnished Cost performance Reports. The research findings identified some major problems which are currently inhibiting the development of accurate and reliable software cost estimates. To reduce these problems, recommendations are made to adopt a common cost estimating technique and to modify the use of contractor furnished software cost information. While the research was limited to ESD, the research findings and the recommendations may be applicable to other DoD software acquisition agencies. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 146 1/3 15/5

RAND CORP SANTA MONICA CALIF

Scheduled Maintenance Policies for the F-4 Aircraft: Results of the Maintenance Posture Improvement Program.

(U)

JUN 76 75P Elwell, Ralph ; Roach, Chris ;  
REPT. NO. R-1942-PR  
CONTRACT: F44620-73-C-0011

UNCLASSIFIED REPORT

DESCRIPTORS: \*Tactical Air Command, \*Jet fighters, \*Maintenance, \*Cost effectiveness, \*Logistics planning, Inspection, Aviation safety, Scheduling, Manpower, Savings, Policies, Air Force planning, Logistics management  
IDENTIFIERS: F-4 aircraft, Holloman Air Force Base

(U)

(U)

Maintenance procedures for the F-4 aircraft in support of the AF Maintenance Posture Improvement Program were examined. The F-4 has been receiving maintenance on two independent schedules, one being a major calendar-based overhaul at a depot, the other being less drastic maintenance phased into six evenly spaced inspections and cyclically performed at the air base every 450 flying hours. It was found that: (1) certain minor inspections were unnecessary or unnecessarily frequent; (2) it was possible, with safety, to extend the base to 600 hours; and (3) many individual base inspections could be performed more efficiently during the dismantling at the depot. With all three steps implemented, it is estimated that, for the entire F-4 force, 1,537,500 maintenance man-hours (over 70 percent) per year would be saved. Furthermore, the number of aircraft tied up in the inspection docks on any given day would be reduced nearly 70 percent -- from 129 to 41.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 141 15/5 14/1 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOL OF  
ENGINEERINGA Historical Analysis of Total Package  
Procurement, Life Cycle Costing and Design  
to Cost.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 76 130P Busek, Joseph R. . Jr;  
REPT. NO. GSM/SM/76S-3

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement, \*Cost estimates,  
\*Management planning and control, Cost analysis,  
Life cycle costs, Cost benefits, Cost  
effectiveness, Comparison, Cost overruns,  
Contracts, Failure, Deficiencies, Scheduling,  
Confidence limits, Department of Defense,  
History

(U)

IDENTIFIERS: \*Design to cost, Total package  
procurement

(U)

This study is the result of an attempt to prepare a historical analysis of the three major Department of Defense efforts developed to control costs in the acquisition process. Some might argue that other concepts, such as Value Engineering, PIECOST, or Should Cost, should be included, however, it is believed that the ones presented here represent the approaches most relevant to individuals involved in program control. The concepts analyzed include Total Package Procurement, Life Cycle Costing, and Design to Cost. The study is directed toward the individual with little knowledge of the concepts. It is designed to provide the reader with a general knowledge of what each concept is, when it is used, what some major ground-rules governing the concept's use are, and what some of the significant strengths and weaknesses of the concept are.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 099 15/5 5/1 15/7

OFFICE OF THE COMPTROLLER OF THE ARMY WASHINGTON D C  
DIRECTORATE OF COST ANALYSIS

Army Force Planning Cost Handbook.

(U)

JUN 76 755P

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes report dated Jun 75.  
AD-A014 084.DESCRIPTORS: \*Army procurement, \*Army planning,  
\*Army budgets, \*Cost analysis, \*Handbooks,  
\*Logistics planning, Management information systems,  
Force level, Army equipment, Management planning  
and control, Army operations, Army training,  
Manpower, National defense, Weapon systems,  
Deployment

(U)

IDENTIFIERS: Programming planning and budgeting,  
Force deployment, Military force structure

(U)

The Army force Planning Cost Handbook (AFPCB) is organized into six sections for ease in locating the types of data contained therein and for its orderly presentation. Section I is an introduction to the AFPCB, its contents and usage; Section II contains per capita cost factors previously published in the Summary Cost Data Book for Army Managers; Section III contains detailed costs for major combat and combat support units, together with methodology previously published in the AFPCB, Annex A (classification confidential) to Section III contains selected SRCs where future weapon systems have been substituted for the currently authorized systems; Section IV contains costs of 'notional' type division force equivalents, including support elements; Section V contains factors and methodology for estimating the cost of reserve units and, Section VI contains operating and support cost factors, as referenced in Appendix C. DA Pamphlet No. 11-4, for developing life cycle cost of materiel systems.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 069 17/7 14/1

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIO INDUSTRIAL ENGINEERING SUPPORT DIV

AGMC Life Cycle Cost Model, an Accounting  
Model for Inertial Navigation Systems. (U)

DESCRIPTIVE NOTE: Final rept.,  
AUG 76 70P Rogge, Richard W. ;  
REPT. NO. AGMC-XXR-76-3

UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: \*Inertial navigation, \*Life cycle  
costs, Cost models, Cost analysis, Accounting (U)

This report described the accounting Model developed by AGMC to evaluate the Life Cycle Costs of Inertial Navigation Systems. However, it is a general purpose Model and may be tailored for other than Inertial Navigation Systems by simply re-naming parameters as applicable. The purpose of the Model is to provide a method to compare two or more types of systems, or maintenance options on the same system. It provides a simplified approach to modeling costs, as the number of different types of input data required is relatively small. This Model has the capability of isolating and identifying start-up costs and recurring costs. It allows analysis through three indenture levels: Line Replaceable Units (LRU), Shop Replaceable Units (SRU), and Depot Replaceable Units (DRU). Included in this report are a description of parameters, Model equations, a sample run print out and a program listing of the Model. (Author) (U)

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AD-A030 024

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 024 5/3 1/3 15/5 14/1  
9/2

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO

Historical Inflation Program (A  
Computerized Program Generating Historical  
Inflation Indices for the Procurement of Army  
Aircraft). (U)

DESCRIPTIVE NOTE: Final rept.,  
SEP 76 80P Lilje, Ralph W. ;  
REPT. NO. USAAVSCOM-TR-76-1A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army procurement,  
\*Inflation(Economics), \*Army aircraft, \*Cost  
analysis, \*Computer programs, Aircraft, Avionics,  
Airframes, Computerized simulation, Cost models,  
Aircraft engines, Time series analysis, Cost  
estimates, Computations, Methodology, History,  
Indexes (U)  
IDENTIFIERS: Inflation(Economics), Prices (U)

This report extends and revises Technical Report 76-1 which presents and describes the Historical Inflation Program, a computerized program generating historical inflation for the procurement of Army aircraft. The program can be updated monthly, is easily revised for changes in Bureau of Labor Statistics methods, and capable of handling data through the transition year, FY 77. Output is expressed as monthly, quarterly, calendar year inflation indices (in Calendar year 1967 base) and inflation factors (in any Fiscal Year base). This report contains updated tables of inflation factors, expressed in a FY 76 base. These indices and factors provide a means of adjusting historical cost data for the procurement of Army aircraft to constant year dollars. New features added since the previous report include: computations for the Derivation of Revised Weighting Factors, detailed indices enabling the adjustment of historical Labor and Material costs separately, and the demonstration of the application of a Time Series Analysis technique known as Box-Jenkins Autoregressive Integrated Moving Average (ARIMA) models to the forecasting of inflation indices. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A029 987 17/4 14/1

DECISIONS AND DESIGNS INC MCLEAN VA

An Application of Multi-Attribute Utility Theory: Design-to-Cost Evaluation of the U.S. Navy's Electronic Warfare System.

(U)

DESCRIPTIVE NOTE: Technical rept. Jul 73-Jun 74,  
OCT 75 45P Hays, Michael L. ; O'Connor,  
Michael F. ; Peterson, Cameron R. ;  
REPT. NO. DT/IR75-3  
CONTRACT: N00014-75-C-0426, N00029-75-C-0084

UNCLASSIFIED REPORT

DESCRIPTORS: \*Electronic warfare. \*Design to cost. Naval Budgets, Costs, Department of Defense, Cost estimates, Cost models, Utilization, Theory

(U)

IDENTIFIERS: Multiattribute utility functions

(U)

This report reflects the development, validation, and utilization of a multi-attribute utility (MAU) model for use by the Naval Electronic Systems Command (NAVELEX) in comparing and evaluating six Electronic Warfare (EW) suite design proposals submitted by contractors under new design-to-cost policies enunciated by the Department of Defense (DoD).

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A029 748 9/2 14/1

MITRE CORP BEDFORD MASS

A Review of Software Cost Estimation Methods.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
AUG 76 56P Clapp, J. A. ;  
REPT. NO. WTR-3264  
CONTRACT: F19628-76-C-0001  
PROJ: AF-572H  
MONITOR: ESD TR-76-271

UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer program documentation. \*Computer programs. \*Cost estimates. Computer programming. Variables. Data bases. Costs. Errors. Machine coding

(U)

IDENTIFIERS: \*Computer software. \*Cost estimation

(U)

Software costs are becoming an increasingly larger portion of the cost of major military systems. This report presents the basic problems in estimating the cost of software development. Current strategies for making estimates are summarized and evaluated. Changes in the management of software acquisition and in the software development methods for large defense systems can improve software cost estimation. A number of these changes are identified.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 670 5/1 15/7 14/1

ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH  
KANS

A case Study of the Combined Arms Combat  
Developments Activity, Cost Consideration in  
Decisionmaking Regarding Combat Development  
Studies.

(U)

DESCRIPTIVE NOTE: Final rept..

JUN 76 91P Reinhard, Ransford A. ;

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: \*Army research, \*Combat effectiveness,  
\*Cost benefits, Army planning, Decision making,  
Contracts, Manpower utilization, Resources,  
Shortages, Military requirements, Determination,  
Military doctrine, Army budgets, Army personnel,  
Civilian personnel, Theses

(U)

IDENTIFIERS: \*Combined Arms Combat Development  
Activity

(U)

This thesis addresses the problem of whether cost-benefit analysis would assist the manager in decisionmaking regarding combat developments studies within the Combined Arms Combat Developments Activity (CACDA) and develops a basis for improved decisionmaking techniques. The case study determined that CACDA is a professional and competent organization capable of developing recommendations, alternatives, or solutions to many critical problems facing the Army; however, this capability has been degraded because CACDA has been tasked to undertake more combat developments studies than it has the capability to conduct. As a result of this excessive work load, significant delays in the planned completion of studies were experienced, and the desired validation of other studies may not have been possible. This situation resulted because the present system and management tools do not provide sufficient criteria for identifying the more critical studies and reducing the scope or eliminating the others. The study concludes that:  
(1) CACDA managers need an analytical tool to assist them in decisionmaking and developing recommendations to higher headquarters regarding whether a study should be conducted as proposed,

(U)

AD-A029 670

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AD-A029 495

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 495 14/1 15/3

AIR FORCE TEST AND EVALUATION CENTER KIRTLAND AFB N  
MEX

Cost of Ownership Handbook.

(U)

MAY 76 218P

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Errata sheet inserted.

DESCRIPTORS: \*Cost analysis, \*Cost estimates,  
\*Handbooks, \*Life cycle costs, \*Defense systems,  
Models, Military procurement, Aircraft,  
Manpower, Maintenance

(U)

IDENTIFIERS: \*Cost of ownership, Subsystems,  
Overhead

(U)

This handbook provides a definition of cost of ownership (operating and support costs) and provides the methodology for estimating and analyzing cost of ownership of systems and subsystems. All costs incident to ownership are considered including associated overhead costs. Included in the handbook is a generalized model which can be adapted to diverse systems and subsystems. Suggested data sources are included to guide users in data collection. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 482 17/7 14/1 15/5 5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Cost Effective ILS. A Case Study and  
Evaluation.

(U)

DESCRIPTIVE NOTE: Study project rept..  
NOV 74 55P Grubb, James R. ;  
PROJ: DSMS-PMC-74-2

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: \*Logistics support. \*Cost  
effectiveness. \*Inertial navigation. \*Systems  
management. Naval procurement. Integrated systems.  
Cost estimates. Life cycle costs. Display systems.  
Stabilized platforms. Avionics. Doppler radar (U)  
IDENTIFIERS: \*Integrated logistic support (U)The purpose of this case study is to determine,  
through the analyses of the acquisition of a system,  
the areas which impact achieving ILS in a cost  
effective manner. The problem areas are identified  
in the case and recommendations are made to correct  
situations which impair achieving cost effective  
ILS. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 330 15/5 19/1

ARMY ARMAMENT COMMAND ROCK ISLAND ILL COST ANALYSIS  
DIV

Ammunition Cost Research Study.

(U)

DESCRIPTIVE NOTE: Technical rept..  
JUN 76 175P Kalal, Gerald W. ; Gannon,  
Patrick J. ;  
REPT. NO. ORSAR-CPE-76-4

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Errata sheet inserted.  
DESCRIPTORS: \*Army procurement. \*Ammunition. \*Cost  
estimates. Cost models. Ammunition components.  
Automatic weapons. Guns. Tanks (Combat  
vehicles). Investment expenditures. Production  
engineering. Industrial plants. Military facilities.  
Army planning (U)At the complete round level of detail,  
statistically valid cost estimating tools for  
independent parametric cost estimates of ammunition  
investment costs have been difficult to construct.  
The long life span of ammunition items reduces the  
number and range of data points available for a given  
weapon system class (e.g., tank main-armament).  
To counter this problem, a research project has  
been undertaken to develop cost estimating tools for  
ammunition components. This report demonstrates how  
component-level cost models can be used to  
independently estimate medium-bore automatic cannon  
and tank main-armament ammunition investment costs  
with greater statistical validity than has been  
obtained with past approaches. The investment cost  
models cover ammunition initial production facilities  
(IPF) and procurement. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 318 12/2

ARMY MISSILE COMMAND REDSTONE ARSENAL ALA COST ANALYSIS DIV

Dependent (Conditional) Probability Aspects of Cost Estimating. (U)

AUG 76 17P Murphy, Edward L., Jr:

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost Estimates, \*Statistical analysis, Probability, Operations research, Weapon systems, Military procurement, Methodology (U)

An analytical procedure can be applied to provide decision makers with insight for making an optimum decision. The procedure is not limited to consideration of only three variables. It can be applied to evaluate conditional aspects of performance cost or time of one part of a system with one or more parts of the same or other systems. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 274 15/5

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

The Dilemma of Uncertainties Associated with Cost Estimating in the Project Management Office. (U)

DESCRIPTIVE NOTE: Student study rept., MAY 76 42P Davis, Guy W. :  
PROJ: DSN5-PVC-76-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Program Management Course.

DESCRIPTORS: \*Army procurement, \*Cost estimates, \*Contract administration, \*Management planning and control, Uncertainty, Cost analysis, Military planning, Contracts, Systems management, Department of Defense, Defense systems (U)

The purpose of the study was to investigate the dilemma of uncertainties associated with the cost estimating process in an Army Program Management Office during the systems acquisition process. In pursuing this objective, the study examines general approaches and purposes for preparing cost estimates and the problem areas which introduce uncertainties in the estimating process. The problems of primary concern were found to be in unforeseen program changes, inflation, inaccurate cost estimating, technical problems, and the lack of information. The report concludes with a discussion of various concepts being implemented to deal with uncertainties, and recommendations for improving estimating procedures in the project office. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 255 15/5

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Design to Cost and Life Cycle Costing:  
Complementary or Dichotomous.

(U)

DESCRIPTIVE NOTE: Student study rept.,

NOV 74 60P McDonald, Warren Randolph ;  
PROJ: DSMS-PMC-74-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Program Management  
Course.DESCRIPTORS: \*Military procurement, \*Design to cost,  
\*Life cycle costs, \*Management planning and control,  
\*Logistics management, Policies, Department of  
Defense, Air Force procurement, Air Force  
planning, Military requirements, Cost estimates,  
Research management, Air Force training,  
Military budgets

(U)

The purpose of the study was to research two  
significant acquisition concepts, namely, design to  
cost and life cycle costing, to examine whether these  
concepts are complementary or dichotomous, and to  
isolate relevant implications for program  
managers.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-AC29 198 5/9 15/5 14/1

AIR FORCE HUMAN RESOURCES LAB BROOKS AFB TEX

Hard Data Sources Concerning More Cost  
Effective Maintenance.

(U)

DESCRIPTIVE NOTE: Final professional paper.

JUL 76 15P Foley, John P. , Jr;  
REPT. NO. AFHRL-TR-76-58  
PROJ: AF-1710  
TASK: 171004, 171010

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Maintenance, \*Human factors  
engineering, \*Cost effectiveness, Life cycle costs,  
Air Force training, Electronic technicians  
Enlisted personnel, Job training, Job analysis,  
Instructions, Military planning, Skills

(U)

The paper introduces the interested reader to a  
number of maintenance related human factors  
technologies and topics. These are important in  
reducing life cycle costs of hardware systems. The  
high costs related to maintenance and maintenance  
personnel are primary causes of high life cycle  
costs. The type and length of many maintenance  
training programs, as well as job structure make  
substantial contributions to such costs. The topics  
discussed in the paper include job performance  
criteria: identification of maintenance tasks;  
measurement of ability to perform identified  
maintenance tasks; ways of obtaining the efficient  
performance of such tasks, such as job performance  
aids and task oriented training; the requirement for  
the restructure of maintenance jobs; as well as the  
need for integrating human factors maintenance  
technologies.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 195 5/1 5/9 5/1

TRAINING ANALYSIS AND EVALUATION GROUP (NAVY) ORLANDO  
FLAA Study to Develop Management Indices for  
the Chief of Naval Education and Training.  
Phase II - Capital Resource Indices.

(U)

DESCRIPTIVE NOTE: Rept. for Feb-Jul 76.  
JUL 76 51P Swope, William M. ; Cordell,  
Curtis C. ;  
REPT. NO. TAEG-TM-76-2

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval training, \*Cost analysis,  
Economic analysis, Budgets, Management information  
systems, Time series analysis, Resource management (U)

This report covers the second phase of a four phase study undertaken by TAEG at the request of CNET to investigate the need for improvement in the quality of management information. This report develops recommendations for a set of management indices covering the use of capital resources. This report provides the CNET and lower echelons of command a set of tools which can be used to identify inefficiencies that exist in the use of training resources. These indices will provide information useful to the decision maker in the establishment of policy, long-range planning, and the management of resources.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 179 14/1

TRAINING ANALYSIS AND EVALUATION GROUP (NAVY) ORLANDO  
FLATraining Resource Classifications: Direct-  
Indirect and Fixed-Variable Cost  
Categories.

(U)

DESCRIPTIVE NOTE: Special rept. Feb-Jun 76.  
JUN 76 23P Swope, William M. ; Cordell,  
Curtis C. ;  
REPT. NO. TAEG-TM-76-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Training, \*Cost effectiveness, Naval  
budgets, Cost analysis, Management planning and  
control, Classification (U)  
IDENTIFIERS: Training resources (U)

At the Chief of Naval Education and Training (CNET) sponsored workshop held on 10 and 11 February 1976 to discuss the development of CNET management indices, the workshop participants recognized that ambiguity exists in the definitions used to classify training resources. CNET tasked the Training Analysis and Evaluation Group to investigate the adequacy of current definitions of direct and indirect costs. The four resource cost categories of direct, indirect, fixed, and variable cause the greatest misunderstanding. This memorandum discusses the difficulties encountered when using these classification schemes and offers a set of definitions which attempt to remove the ambiguities associated with their use. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 965 17/9 14/1 9/5

RAYTHEON CO HUNTSVILLE ALA EQUIPMENT DI.

Cost Effective Solid State Transmitter Study.

(U)

DESCRIPTIVE NOTE: Final rept. Apr 75-Apr 76.  
JUN 76 151P Soler, Oscar L. ;

CONTRACT: F30602-75-C-0142

PROJ: AF-4506

TASK: 450603

MONITOR: RADC TR-76-191

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Radar transmitters. \*Cost effectiveness. Transmitter receivers. Solid state electronics. Modules(Electronics). Cost models. Life cycle costs. Cost analysis. Reliability(Electronics)

(U)

Cost models were developed based on the performance and physical characteristics of solid state modules. The cost models are sensitive to power, frequency, bandwidth, device characteristics, noise figure, reliability and quantities. However, they are totally independent of specific configuration, thus enabling cost estimation of any module configuration, power level, frequency, etc. The models were then used to examine cost sensitivity to frequency, power output and device junction temperatures. This provided guidelines for cost effective design in terms of power levels and operating junction temperatures. Also developed were estimates of 'dollars per watt' for UHF, L and S bands. Comparable solid state and tube transmitters were postulated at the three bands of interest. The study showed that for certain applications solid state systems are competitive with tubes when total life cycle costs are considered.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 951 15/5 14/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Issues and Problems in Life Cycle Costing in DDJ Major Systems Acquisition.

(U)

DESCRIPTIVE NOTE: Student study rept..

NCV 74 45P Reynolds, Jon F. ;

PROJ: DSMS-PVC-74-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Program Management Course.

DESCRIPTORS: \*Military procurement. \*Life cycle costs. \*Management planning and control. \*Logistics management. Department of Defense. Policies Military planning. Military requirements. Weapon systems. Research management. Cost estimates. Cost analysis. Management engineering

(U)

Life cycle costing (LCC) is a widely advocated economic analysis tool and procurement technique in the Department of Defense. However, little information is readily available on the considerable difficulties which exist in implementing or employing LCC as a practical, convenient, everyday tool in defense decision making. This study was undertaken to highlight the weaknesses and limitations of LCC as a means of strengthening it through more enlightened applications and more productive development of LCC methodology.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 922 20/1 5/3 14/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN ILL

Cost Effectiveness of Alternative Noise Reduction Methods for Construction of Family Housing.

(U)

DESCRIPTIVE NOTE: Interim rept.,

JUL 76 92P Schomer, P. D.; Kessler, F. M.; Chanaud, R. C.; Homans, B. L.; McBryan, J. C.;

REPT. NO. CERL-IR-4-3

PROJ: DA-4-A-762720-A-696

TASK: 4-A-762720-A-89602

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Noise reduction, \*Housing projects, \*Construction, \*Cost effectiveness, Residential section, Sound transmission, Construction equipment, Noise pollution, Military engineering, Texas, Charts, Graphs (U)

IDENTIFIERS: Family housing, Noise level, Fort Hood(Texas) (U)

The objective of this work was to obtain the cost/benefit relationships associated with new, quieter construction equipment and/or construction process modification. A workable cost/benefit model was developed for this purpose, but a significantly larger data base must be acquired to apply this model. This initial work effort concentrated on one type of construction-multifamily housing construction. Significant findings included: (1) Construction site boundary noise can be significantly reduced by a number of currently available techniques; (2) the use of two quieter machines of lower capacity in lieu of one standard machine not only costs more but is of questionable noise control value, since the total noise exposure is sometimes greater from two machines than from one larger machine; (3) cost/benefit relationships for estimating purposes can be provided only after a significantly larger data base is obtained. (Author) (U)

AD-A028 922

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-AC28 859 14/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Design to Cost Policy Versus Implementation.

(U)

DESCRIPTIVE NOTE: Study project rept.,

NOV 74 66P Sheppard, James Earl;

PROJ: DSMS-PWC-74-2

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Design to cost, \*Cost estimates, Contract administration, Full scale systems, Literature surveys, Trade off analyses, Military procurement, Maintenance (U)

IDENTIFIERS: Program management, Ownership costs (U)

This report chronologically reviews the literature and proponent statements regarding Design to Cost (DTC) since issuance of DODD 5000.1 in July 1971. The report concludes that a basic conflict exists between DODD 5000.1 and current implementation practices. Problem areas resulting from this conflict which are identified and discussed are: Softness of the 'ilities' Area; Initial Cost Estimates of DTC Goals, and; The Impact Upon DTC Goals Resulting From the Contractual Gap Between Full Scale Development and Production. Concepts also discussed from a philosophical point of view are: Results of Design Simplicity; Commercial Practices, and; Design Tradeoffs versus Design Innovation. (Author) (U)

AD-A028 859

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 854 5/9

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Efficiency Indicators for Education and Training.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 76 58P Lukaczzyk, Norbert ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval training. \*Cost effectiveness. Efficiency. Courses; Education). Indicators. Costs. Graduates. Theses. Teaching methods

(U)

The indicators Staff Student Ratio, Cost per Student per Unit Time, and Cost per graduate are discussed with emphasis on the analysis of their properties for the use as indicators for CNET to monitor efficiency of the training establishment both overall, and at different levels. The arguments show that the cost per graduate is the most appropriate indicator for a single course. Methods are derived to determine appropriate methods of aggregation for multiple courses. The derived indicators have the mathematical form of the Laspeyres and Paasch indicators, used in economic theory for the cost of living index. They are applied to 60 courses of SSC San Diego and compared to indicators determined by linear regression based on the same data set.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 666 12/1 14/1

FLORIDA UNIV GAINESVILLE

A Round-Trip Location Problem on a Tree Graph.

(U)

AUG 74 18P Chan, Albert W. ; Francis, Richard L. ;  
CONTRACT: DA-ARD-D-31-124-73-G149  
MONITOR: APC 11521.5-U

UNCLASSIFIED REPORT

Availability: Pub. in Transportation Science v10 p35-51 1976.  
SUPPLEMENTARY NOTE: Supersedes Rept. no. RR-74-7 dated Jun 74. AC-782 740.

DESCRIPTORS: \*Graphics. \*Routing. \*Cost analysis. \*Range(Distance). \*Facilities. Networks. Algorithms. Roads. Reprints

(U)

IDENTIFIERS: Round trip. Tree graphs

(U)

The problem considered is to locate one new facility with respect to a finite number of pairs of existing facilities on a tree graph, which typically represents a road network, so as to minimize the maximum cost, where costs are linear increasing functions of the round-trip distance a vehicle based at the new facility travels via a pair of existing facilities. Based on an attainable lower bound for the minimax problem, an algorithm is developed that yields all optimal solutions to the problem.

(Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZCWO7

AD-A028 487 5/1 14/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

An Objective Functional Approach to  
Structuring Contractual Performance  
Incentives.

(U)

DESCRIPTIVE NOTE: Study project rept..  
NOV 75 87P Pintle, Paul Edward :  
PROJ: DSMC-PWC-75-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Contracts. \*Life cycle costs.  
\*Contract administration. \*Military procurement.  
Mathematical models. Military requirements. Weapon  
systems. Acquisition. Costs.  
Performance(Engineering). Reliability.  
Negotiations. Cost models. Motivation. Cost  
analysis. Computerized simulation. Guided missile  
components

(U)

IDENTIFIERS: \*Incentive contracts. Availability.  
Multiple incentive contracts

(U)

A method of structuring contractual performance  
incentives is developed in this report. The method  
derives the incentive structure directly from the  
modeled Life Cycle Cost (LCC). The method  
is illustrated for a hypothetical tactical surface-  
to-surface missile system and an example is provided  
of the methods use, at the component level for a  
single performance parameter, and incorporation into  
an actual procurement. The method is analyzed  
with existing Multiple Incentive Contracts  
Analysis Program (MICAP) approaches and a  
discussion provided.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZCWO7

AD-A028 408 15, 5 5/1 5/9 14/2  
14/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Management of Special Tooling and Special  
Test Equipment Acquired on Major Weapon  
System Acquisition Programs.

(U)

DESCRIPTIVE NOTE: Student project rept..  
NOV 75 30P Grouter, John E. :  
PROJ: DSM5-PWC-74-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force procurement. \*Systems  
management. \*Courses(Education). Test equipment.  
\*Management planning and control. \*Tools. \*Cost  
analysis. Data acquisition. Weapon systems.  
Material. Contracts. Logistics management.  
Reusable equipment

(U)

IDENTIFIERS: Program management. Special  
equipment

(U)

This report reviews, summarizes and makes  
recommendations where improvements are needed in the  
management of special tooling and special test  
equipment. The four areas discussed in this report  
are: (1) Acquisition of data for Special  
Test Equipment; (2) Improper acquisition of  
General Purpose Plant Equipment; (3)  
Special Tooling identification for reuse; and  
(4) Cost/Benefits from reuse.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 407 19/8 14/1 5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Design to Cost of Advanced Lightweight Torpedo.

(U)

DESCRIPTIVE NOTE: Student project rept.,  
NOV 74 35P Davis, James V. ;  
PROJ: DSMS-FMC-74-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Torpedoes, \*Design to cost,  
\*Advanced weapons, \*Cost estimates, \*Management  
planning and control, Trade off analyses,  
Lightweight, Antisubmarine warfare, Military  
budgets

IDENTIFIERS: Management tools, Guidelines,  
Program management

(U)

(U)

The purpose of this study exercise has been aimed at determining how the Design-to-Cost principles/goals established by DOD Directive 5000.1 and focused by SECNAVINST 5000.1 are actually applied at the working level in a Navy Project Office. The project studied in this report, The Advanced Lightweight Torpedo (ALWT) was in its conceptual phase, just prior to DCARC 1. The Project Office was in the process of writing a definitive Design-to-Cost Plan, specifically for ALWT, but certainly applicable, if successful, as a guide, to any future project office. While this paper deals almost entirely with the Conceptual Phase application, the ALWT DTC plan speaks to the entire life cycle of the project.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 375 5/1 14/2 5/3

STANFORD RESEARCH INST MENLO PARK CALIF

Industrial Management Survey of AFES  
Operations, Volume 2. Findings,  
Conclusions, and Recommendations.

(U)

DESCRIPTIVE NOTE: Final rept. Apr-Oct 75.  
JAN 76 31SP Andersen, Dudley G. ;  
REPT NO. SRI-MSU-4163  
CONTRACT: MDA903-75-C-0230

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-A028 374.

DESCRIPTORS: \*Management planning and control,  
\*Military budgets, \*Manpower, \*Military planning,  
\*Cost effectiveness, Recruits, Efficiency,  
Surveys, Military operations

(U)

IDENTIFIERS: \*Military recruiting stations,  
AFES(Armed forces examining and entrance  
stations), Armed forces examining and entrance  
stations, Financial planning, Workloads

(U)

This report comprises two volumes. This one presents the detailed findings, conclusions, and recommendations developed as a result of this study. The objectives of this study were to evaluate the efficiency and cost-effectiveness of Armed Forces Examining and Entrance Stations (AFES) operations and to develop recommendations for improvement. An improved manpower planning system was recommended based on formulas developed for relating staff requirements to work load. Cost models were developed for measuring cost performance. The study results in these areas provide AFES management a coherent system for improved manpower and financial planning, reporting, and control.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 374 5/1 14/2 5/3

STANFORD RESEARCH INST MENLO PARK CALIF

Industrial Management Survey of AFES  
Operations. Volume 1. Executive Summary.

(U)

DESCRIPTIVE NOTE: Final rept. Apr-Oct 75.  
JAN 76 18P Andersen, Dudley G. :  
REPT. NO. SRI-MSU-4163  
CONTRACT: MDA903-75-C-0230

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A028  
375.

DESCRIPTORS: \*Management planning and control,  
\*Military budgets, \*Manpower, \*Military planning,  
\*Cost effectiveness, \*Recruits, Efficiency, Cost  
effectiveness, Surveys, Military operations  
IDENTIFIERS: AFES (Armed forces examining and  
entrance stations), Armed forces examining and  
entrance stations, Financial planning, Manpower  
planning system, Workloads, Military recruiting  
stations (U)

This report comprises two volumes. This one  
presents highlights of the findings, conclusions, and  
recommendations developed as a result of this study.  
The objectives of this study were to evaluate the  
efficiency and cost-effectiveness of Armed Forces  
Examining and Entrance Stations (AFES)  
operations and to develop a recommendations for  
improvement. An improved manpower planning system  
was recommended based on formulas developed for  
relating staff requirements to work load. Cost  
models were developed for measuring cost performance.  
The study results in these areas provide AFES  
management a coherent system for improved manpower  
and financial planning, reporting, and control. The  
AFES system was evaluated in terms of its adequacy  
to meet mobilization requirements and was found to be  
generally adequate. The role of AFES in  
marketing enlistment was evaluated and guidelines  
were recommended for making a more positive  
contribution in this area. An examination of the  
geographic locations of the AFES was made from the  
standpoint of cost-effectiveness and a methodology  
was developed for determining the optimal number and  
locations of the AFES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 268 15/5 13/8 14/1

DARCOM INTERN TRAINING CENTER TEXARKANA TEX

An Analysis of the Inflationary Effects on  
Inventory Systems.

(U)

DESCRIPTIVE NOTE: Final rept..  
JUN 76 39P Harris, Tyrone :  
REPT. NO. DARCOM-ITC-02-08-76-113

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Inventory control, \*Procurement,  
\*Industrial production, \*Cost analysis,  
Optimization, Impact, Numerical analysis (U)  
IDENTIFIERS: \*Inflation (Economics) (U)

This report was done as a continuation of a study  
done by Dr. Ram B. Misra, Texas A and M  
University, on the effects of inflation of  
different inventory systems such as the lot-size and  
order-level-lot-size systems. Dr. Misra's study  
concluded that inflation had some significant effects  
on certain parameters in the lot-size system. In  
this study a sensitivity analysis is done for the  
lot-size, order-level-lot-size, and finite production  
rate systems. Three numerical examples are used in  
the analysis and tables and graphs are given  
illustrating the results of each system. Also in  
this report, an analysis is done on the effectiveness  
of the starting solution for the various systems  
mentioned in arriving at the optimal solution for the  
lot size. (Author) (U)

AD-A028 268

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 243 5/3 12/1 15/5

CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER

Competitive Prices, Dynamic Programming under  
Uncertainty, a Nonstationary Case. (U)

DESCRIPTIVE NOTE: Research rep.,

JUN 76 53P Schechtman, Jack ;

REPT. NO. ORC-76-19

CONTRACT: N00014-76-C-0134, NSF-SOC-75-15566

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost models, \*Economic models,  
\*Resources, \*Dynamic programming, Depletion,  
Uncertainty, Storage, Consumption, Production  
models, Growth(General), Time domain (U)  
IDENTIFIERS: Nonrenewable resources, Pricing,  
Competitive prices (U)

A one-good economy is considered. The good can be used either for consumption or for production. If  $c$  units of the good are consumed and  $x$  units of the product are put into production, then the society gets  $u(t)$  ( $c$ ) +  $p(t)$  ( $x$ ) units of satisfaction, or utility, and the quantity of the good available in the next period is  $f(t)$  ( $x$ ;  $w(t)$ ) where  $w(t)$  are independent random variables. Using the concept of competitive prices and policies qualitative properties of optimal policies for finite and infinite time horizon problem are obtained. These results have applications to problem of nonrenewable resources, storage problem and economic growth models under uncertainty. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 088 5/4 5/3

RAND CORP SANTA MONICA CALIF

The Opportunity Cost of the Nonmonetary  
Advantages of the Soviet Military R and D Effort. (U)

AUG 75 62P Ofer, Gur ;

REPT. NO. R-1741-DDRE

CONTRACT: DAHC15-72-C-0083

UNCLASSIFIED REPORT

DESCRIPTORS: \*Political science, Technology,  
\*Cost analysis, USSR, National security,  
Research management, Military research, Military  
budgets, Civilian personnel, Resource management,  
Comparison, United States Government, Economic  
warfare (U)

Analyzes the major nonbudgetary advantages enjoyed by the military research and development sector in the Soviet economic system. This analysis also investigates to what extent and in what form such advantages are potentially transferable from the military to the civilian sector, thereby constituting a real economic burden on the Soviet economy. The military R and D sector benefits from a high-powered priority system that overrides the planning network. It receives ample resources and facilities; it has first claim on supplies. Specifically produced items and scarce resources. Finally, there are no spillover effects to the civilian economy. This disadvantage stems from secrecy, the need to limit new materials and components and lack of funds to diffuse the achievements of military R and D. This report concludes that the opportunity costs of Soviet military research and development are greater than reflected in the budget, and the investment of so much in military R and D seriously limits R and D in other areas. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 019 13/13 5/1

ARMY ARMAMENT COMMAND ROCK ISLAND ILL SYSTEMS ANALYSIS  
DIRECTORATEA Study of Variability of Construction Cost  
Estimates.

(U)

DESCRIPTIVE NOTE: Final note,  
JUL 76 21P Weed, Harrison D. ;  
REPT. NO. DRSAR/SA/N-43

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Construction, \*Cost estimates,  
Contracts, Standard deviation, Mean, Analysis of  
variance

(U)

IDENTIFIERS: \*Construction costs, Bids

(U)

A study was made of the variability of construction cost estimates based on bids of planned construction projects during the 1971 time frame. Data was obtained from the Office of the Chief Engineer on bids received on 122 planned construction projects during CY 1971 out of a total of 795 such projects. The 122 projects represented planned construction in eight engineering categories of construction cost which had mean bids ranging from 18,000 to 28,000,000 dollars. The mean bid, standard deviation, coefficient of variation and number of bids were destined for each project analyzed in the study. The coefficient of variation (standard deviation/mean) was studied as related to mean bid size, number of bidders, engineering district, and engineering category.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A027 882 15/5 12/2 5/1

GEORGE WASHINGTON UNIV WASHINGTON D C PROGRAM IN  
LOGISTICSMinimizing the Cost of Completing a Project  
Subject to a Bound on the Expected Delay  
Time.

(U)

MAY 76 19P Falk, James E. ;  
REPT. NO. Serial-T-336  
CONTRACT: N00014-75-C-0729  
PROJ: NR-347-020

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Costs, \*Delay, \*Management  
engineering, \*Logistics, \*Operations research,  
Optimization, Random variables, Linear systems,  
Repair, Scheduling

(U)

IDENTIFIERS: PERT, Nonconvex optimization

(U)

Given a project with well-defined events and activities, suppose the starting times of the activities are subject to random delays. Suppose it is possible to reduce the magnitude of these delays at additional cost. In this paper, we derive an expression for the total expected delay time of the project, and show that it can be expressed as the maximum of a number of linear expressions. To achieve at most a given expected delay time at minimum cost, we are led to examine an optimization problem with an excessively large number of linear constraints. A simple cutting plane algorithm is applied to the problem, yielding a practical method of solution. A non-convex example with five activities is used to illustrate the method.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A027 665 14/1 17/2

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint  
Tactical Communications. Volume III. Life  
Cycle costing. Appendix G. Cost  
Uncertainty Analysis Model.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 76 46P Boyd, Eugent T. ;  
REPT. NO. TIO-ORT-032-76-V3-AP-G

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3A, AD-A021  
938.

DESCRIPTORS: \*Cost effectiveness, \*Life cycle costs,  
\*Tactical communications, Uncertainty, Fortran,  
Computer programming, Joint military activities

(U)

This appendix presents some of the possible  
approaches for treating cost uncertainty and to  
present the approach and model which the TRI-TAC  
Office uses to augment the methodology for  
estimating life cycle costs. A Cost Uncertainty  
Model Program User's Guide and a Cost  
Uncertainty Model Program are also included.  
(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A027 402 19/3 19/6

ARMY ARMAMENT COMMAND ROCK ISLAND ILL SYSTEMS ANALYSIS  
DIRECTORATE

Cost/Schedule Uncertainty Analysis of the  
XM1/Alternative Armament Programs.

(U)

DESCRIPTIVE NOTE: Final rept.,  
APR 76 88P Banash, Robert C. ; Bceson,  
James B. ;  
REPT. NO. DRSAR/SA/R-08

UNCLASSIFIED REPORT

DESCRIPTORS: \*Tanks (Combat vehicles), \*Weapon  
systems, \*Cost analysis, Scheduling, Cost  
overruns, Production control, Management planning  
and control, Risk analysis, Retrofitting, Foreign  
technology

(U)

IDENTIFIERS: M-1 tanks, XM-1 tanks, \*Tank  
guns

(U)

A comparison was made of development cost/schedule  
burdens incurred by adopting either the US 105mm,  
the UK 110mm or the FRG 120mm armament systems  
into the US XM-1 Tank Program. These  
comparisons were made in terms of schedule delays and  
additional cost to the XM-1 Program. Programs  
were developed to produce US guns/ammunition from  
FRG/UK technical data packages. Modifications  
to the XM-1 Program were structured to account  
for vehicle redesign phase to accept the FRG/UK  
systems. Cost and schedule estimates for each  
program, that is, US XM-1 with the US 105mm, the  
UK 110mm and the FRG 120mm armament systems, are  
presented and compared with the planned XM-1 105mm  
Program.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A027 365 17/2 14/1 9/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

A Preliminary Cost Analysis of the Communications Processor for the F-15 Joint Tactical Information Distribution System.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 76 87P Gaumer, William Francis :  
REPT. NO. GSM/SM/76S-8

UNCLASSIFIED REPORT

DESCRIPTORS: \*Command and control systems, \*Communication equipment, \*Cost analysis, \*Data processing, \*Tactical data systems, Cost estimates, Minicomputers, Logistics support, Computer program documentation, Jet fighters, Air Force budgets, Tactical communications, Theses  
IDENTIFIERS: \*Communication processors, Computer software, F-15 aircraft

(U)

(U)

Budget restraints over the past several years have caused the Department of Defense to take a closer look at the new systems that it requires. Emphasis has been placed on not just the initial cost but the entire life cycle of the system. The Air Force has initiated several studies and projects aimed at reducing the total cost of new aircraft avionics systems. This thesis presents a preliminary analysis of the costs involved in acquiring and supporting a communications processor for the F-15 Joint Tactical Information Distribution System terminal. The characteristics of a digital computer are examined from a historical management perspective as well as the engineering design considerations. Two designs are presented: one is based on the current F-15 central computer while the other is based on current microcomputer technology. The software development and hardware procurement costs are estimated for each design, and the cost impact of the designs on several logistic support costs is also discussed. An analysis of these costs indicates that the microcomputer design would be the least costly of the two designs.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A027 288 5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Life Cycle Costing and the Effect of Ownership Costs.

(U)

DESCRIPTIVE NOTE: Study project rept..  
NOV 75 36P Schumacher, William J. :  
PROJ: DSVS-PWC-75-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Cost estimates, Weapon systems, Acquisition, Operation, Logistics support, Manpower, Resource management, Military procurement, Maintenance management, Management information systems, Costs, Data bases, Standardization  
IDENTIFIERS: \*Ownership costs

(U)

(U)

The purpose of this study was to examine life cycle costing (LCC) and to determine the effect of ownership (i.e., operating and support) costs on the life cycle cost of a weapon system. Most of the discussion deals with the application of LCC to major system acquisition. This report focuses on the collecting and reporting of ownership costs as well as addressing problems encountered by DOD in collecting ownership cost data and in applying LCC. Despite the significant cost savings demonstrated by LCC procurements, its use has been limited because of the uncertainty of the legal validity of LCC; insufficient emphasis by DOD in training personnel; lack of a reporting system within DOD; and the increased work required in some LCC contracts. Utilizing LCC for estimating the total cost of a weapon system has had even less application because of the inconsistency of life cycle cost estimates and a lack of cost data by weapon system. While progress has been made in improving cost estimates, collection of ownership costs by weapon system has moved slowly because of the multitude of data systems required and the lack of standard definitions of cost elements.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 964 9/2

ELECTRONIC SYSTEMS DIV HANSCOM AFB MASS

Summary Notes of a Government/Industry  
Software Sizing and Costing Workshop.

(U)

OCT 74 61P  
REPT. NO. ESD-TR-76-166

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programming, \*Costs,  
\*Meetings, Government procurement, Industries,  
Specifications  
IDENTIFIERS: \*Computer software(U)  
(U)

The Government/Industry Software Sizing and Costing Workshop was held on 1 and 2 October 1974 at the Electronic Systems Division (AFSC), Hanscom Air Force Base, Massachusetts. The overall purpose of the workshop was to improve communications between industry and Government on the problems of forecasting software development costs. More specifically, the workshop focused attention on two key questions: (1) What are the attributes of a good software requirements specification; (2) What are the prime factors affecting/driving software costs. These summary notes present the major points discussed and recommendations made during the splinter group discussions.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 944 9/5

MARTIN MARIETTA AEROSPACE ORLANDO FLA

Printed Wiring Board Production Assembly  
Cost Guidelines Manual.

(U)

DESCRIPTIVE NOTE. Final production manual rept. 26 Mar  
75-25 Mar 76.MAR 76 234P Osborne, Sol C.; Hutchinson,  
Wendell R.; Tattaglia, Frederick E.;  
REPT. NO. CR-13826-2  
CONTRACT: DAAB07-75-C-0029  
PROJ: DA-2759673

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Printed circuit boards, Cost analysis,  
Cost models, Production engineering, Automation,  
State of the art, Manual operation, Costs

(U)

Cost forms, Cost/manhour data tables and equipment payoff breakeven cost models provided for the user of this manual; a direct approach of selecting the lowest cost PWB component; assembly method. The comparisons required for solving assembly problems are given on state-of-the-art manual and automatic assembly methods. Formulated assembly and cost guidelines are provided for processes and equipment described for variety of manual and automatic assembly methods. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 560 5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Useful Life Cycle Cost Estimates for  
Defense Systems - An Evaluation.

(U)

DESCRIPTIVE NOTE: Study project rept..

NDV 75 45P Roberson, Carlton Franklin ;

PROJ: DSMS-PMC-75-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Life cycle costs,  
Decision making, Military procurement, Weapon  
systems, Department of Defense, Defense planning,  
Integrated systems, Standardization, Numerical  
methods and procedures

(U)

This study analyzes and evaluates the concept and framework of Life Cycle Cost (LCC) estimate policy, guidance, and methodology efforts within the context of DoD major weapon system acquisition strategy. The analysis considered the general types of LCC estimates, the value of estimates in the decision making process, and the interaction of the OSD Assistant Secretaries and policy councils in LCC policy formulation and implementation. Current DOD publications, staff memoranda, and informal interviews with OSD officials were used as the basis for the analysis and evaluation. The study concludes that the ambiguity of current DoD directives regarding LCC estimate policy, guidance, and methodology responsibility makes it extremely difficult to understand where the DoD stands today with LCC. Although within OSD an overall LCC plan may exist in conjunction with well understood in-house responsibilities, in the opinion of the author it has not been clearly nor consistently promulgated within the whole of DoD. The emergence of a single, comprehensive LCC estimating concept which embodies all phases of weapon system acquisition and ownership does not appear to be forthcoming.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 559 5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

The U.S. Navy Foreign Military Sales  
Program.

(U)

DESCRIPTIVE NOTE: Study project rept..

NDV 75 41P Vincent, William L. ;

PROJ: DSMS-PMC-75-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval procurement, \*Cost estimates,  
\*Management, Project personnel, Decision making,  
Military organizations, Finance, Management  
information systems, Logistics management,  
International, Naval vessels, Weapon systems,  
Acquisition, Overseas, Military  
forces(Foreign), Navy, Military assistance,  
Foreign aid  
IDENTIFIERS: \*Foreign military sales, Naval  
material command, Program management,  
International logistics

(U)

(U)

This study evaluates the organization and procedures presently established to deal with Navy Foreign Military Sales (FMS). It focuses on the program office responsible for implementation of the case and ultimate delivery of the system which has been purchased. The paper, first, describes the Navy's basic organization and how it relates to DOD and State Department Security Assistance Offices. The following section tracks a typical FMS case from receipt of the customers purchase request, through agreement on sale, to final execution of the case. The paper concludes with a discussion of specific issues relating to financial management problems which currently are being evaluated in the Navy. These issues deal with the requirement to price out a proposed sale and how funds are managed after case implementation. Poor price estimates affect relations with the foreign customers and cause considerable administrative difficulties which result in lost time and possibly, financial loss. Recommendations concentrate on the means by which the accuracy and completeness of price estimates can best be achieved. The funds management problem is primarily associated with the sale of ships.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 557 5/3 5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Economic Escalation and the Military Program Manager.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
NOV 75 44P Buckelew W. F. ;  
PROJ: DSMS-PMC-75-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Inflation(Economics), \*Military procurement, \*Cost estimates, Weapon systems, Resource management, Project personnel, Allocations, Department of Defense, Mathematical prediction, Errors, Rates, Indexes(Ratios), Forecasting, Management planning and control  
IDENTIFIERS: Escalation, Program management

(U)

(U)

This study investigates the severe impacts which inflation has had on the economic resources available to the Department of Defense and the resulting pressures on the program manager to improve the cost estimates for his program. A large portion of the cost estimating errors for weapon systems were found to be due to errors in the estimation of inflation rates. Recent policies attempt to alleviate this situation by: (1) Emphasizing the importance of the program manager's 'best estimate' for near term predictions; and (2) Using GDD-wide escalation rates to be applied to estimates for out-years. Changes have also been made in reporting formats to highlight the extent of escalation included in cost estimates and the rationale used in arriving at projected inflation rates. The report discusses methods which the program manager has available to predict inflation and some of the terms, concepts and mathematics which he must use. Inflation is likely to continue at high levels and, therefore, the program manager must remain familiar with inflation aspects of his program even though there is little or no specific guidance available to him for accurately predicting inflation rates for his program.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 386 5/9 14/1 5/10

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

An Economic Analysis of Lay-Offs.

(U)

DESCRIPTIVE NOTE: Student project rept.,  
MAY 76 41P Roland, Jay R. ;  
PROJ: DSMS-PVC-76-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Unemployment, \*Cost effectiveness, \*Morale, \*Economic analysis, Employee relations, Delay, Scheduling, Procurement, Negotiations  
IDENTIFIERS: \*Lay off analysis, \*Idle employees, Scheduled delays, Reductions of effort, Contingency planning

(U)

(U)

This study is an investigation into the economics of government contractor lay-offs due to government directed schedule delays or permanent reductions of effort. The topic becomes increasingly important in the dynamic political and business environment in which weapon systems are acquired today. By using the analysis process developed in this study, the program office should be able to plan and execute level of effort delays and reductions in the manner most cost effective to the government. The results show that for both short-term and permanent reductions of personnel, the optimum economic solution is neither to lay off all idle employees or to keep all on the payroll. In most cases there are particular numbers of layoffs that minimize either the government or the combined government-contractor expenses. In general, the best solution will be to minimize the combined expenses and negotiate the cost with the contractor to reduce the government expense.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 299 15/5 14/1

RAND CORP SANTA MONICA CALIF

Costs of the Next Due Base-Level  
Inspection during a Depot Visit.

(U)

MAR 76 E7P Browning, Thomas H. ;Cohen,  
I. K. ;Lu, John Y. ;  
REPT. NO. R-1865-PR  
CONTRACT: F44620-73-C-0011

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Logistics support. \*Cost estimates.  
Depots. Jet fighters. Maintenance. Scheduling.  
Inspection. Preventive maintenance  
IDENTIFIERS: Shop maintenance

(U)

(U)

An outline and illustration of a method for estimating the incremental man-hour costs of doing a base-level inspection during a depot visit as a means to reduce total system costs (base and depot). It is expected that the depot can perform the base-level inspection more economically because the depot performs most of the base-level inspection in conjunction with any Programmed Depot Maintenance (PDM) and Modifications (MOD), and only a small incremental cost would be required to do the few additional tasks needed. This report discusses a simple insight based on depot maintenance procedures which reduces the forecast of the unpredictable workload to a minor problem; the predictable work can be obtained from DART (Daily Automatic Rescheduling Technique). Given an adequate sample of histories to acquire the predictable and unpredicted estimates, the results from the method described are judged to be adequate for decisionmaking. This method, illustrated in this report for the F-4 case, is believed to be applicable to other weapon systems undergoing PDM/MODs at other Air Logistics Centers.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 206 17/2 14/1

NAVAL ELECTRONICS LAB CENTER SAN DIEGO CALIF

A-7 ALOFT Life-Cycle Cost and Measures of  
Effectiveness Models.

(U)

DESCRIPTIVE NOTE: Test and evaluation rept. Jul 75-Mar 76.

MAR 76 49P Greenwell, R. A. ;  
REPT. NO. NELC-TR-1982  
PROJ: W41X1. NELC-F226  
TASK: W41X1001

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Intercommunication systems. \*Life cycle costs. \*Cost analysis. \*Fiber optics transmission lines. Avionics. Attack aircraft. Effectiveness. Performance. Coaxial cables. Optimization. Models  
IDENTIFIERS: A-7 aircraft

(U)

(U)

Economic analyses are being conducted to determine the measure of effectiveness of fiber-optic and coaxial-cable systems for combat aircraft. Participating are the Naval Electronics Laboratory Center, Naval Postgraduate School, and the McDonnell Aircraft Company. The naval activities have developed a Bottoms Up model and McDonnell Aircraft Company has developed a Top Down model. These two models will be utilized to compare and analyze the optimum system in terms of performance and cost.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A025 801 1/3 15/5

AIR FORCE MATERIALS LAB WRIGHT-PATTERSON AFB OHIO

Environmental Effects on Maintenance Costs  
for Aircraft Equipment. (U)

DESCRIPTIVE NOTE: Final rept. Nov 73-Jan 76.

MAY 76 32P Moore, Thomas K. ;

REPT. NO. AFML-TR-76-31

PROJ: AF-7351

TASK: 735108

MONITOR: GIDEP, GIDEP E060-0665,347.40.00.00-G7-  
12

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft equipment, \*Weathering,  
\*Aircraft maintenance, \*Cost analysis, Life cycle  
costs, Corrosion, Maintenance management,  
Predictions, Regression analysis, Engine starters,  
Doppler radar (U)  
IDENTIFIERS: \*Environmental effects, F-4 aircraft,  
F-4E aircraft, C-135 aircraft, KC-135 aircraft (U)

A series of mathematical models of the influence of  
environmental effects on maintenance costs was  
constructed using linear regression analysis. The  
equipment whose behavior were modeled were the KC-  
135 Doppler Radar and the F-4E engine  
starter. Models explaining more than 70% of the  
variation in maintenance cost as a result of weather  
factors were developed, where only the two most  
current month's weather was considered.  
Recommendations for further research using more  
sophisticated model development techniques are  
presented. A limited economic analysis of some life  
cycle cost implications of failure countermeasures  
for increased environmental resistance is given. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A025 276 1/3 15/5

RAND CORP SANTA MONICA CALIF

A Computer Model for Estimating Development  
and Procurement Costs of Aircraft (DAPCA-  
III). (U)

MAR 76 94P Boren, H. E. , Jr:

REPT. NO. R-1854-PR

CONTRACT: F44620-73-C-0011

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes rept. no. R-761-PR-  
abridged, AD-A012 091. See also report dated Feb  
76, AD-A022 086 and report dated Mar 74, AD-780  
636.

DESCRIPTORS: \*Military aircraft, \*Air Force  
procurement, \*Cost estimates, Computer programs,  
FORTRAN, Airframes, Aircraft engines, Avionics,  
Manufacturing, Engineering, Turbofan engines,  
Turbojet engines, Cost models, Cost analysis,  
Logistics management (U)  
IDENTIFIERS: FORTRAN 4 programming language,  
Sensitivity analysis, DAPCA3 computer program (U)

The report describes and lists an updated computer  
model (DAPCA-III) that computes from parametric  
relationships the development and procurement costs  
of two major flyaway subsystems of an aircraft--  
airframes and engines. Avionics costs are included  
but are treated as throughputs. Cumulative average,  
unit, and total flyaway costs are obtained for up to  
ten specified aircraft production quantities.  
Flight and avionics procurements are allowed.  
Although costs of spare engines are not considered  
to be flyaway costs, they are calculated in the model  
as additional costs not included in the totals.  
Unless otherwise specified, all costs are  
calculated in 1975 dollars. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A025 133 13/8 13/9

DARCOM INTERN TRAINING CENTER TEXARKANA TEX

A Regression Model Predicting Part Costs  
Machined by Numerically Controlled and  
Conventional Machinery.

(U)

DESCRIPTIVE NOTE: Final rept..

MAR 76 64P Keister, Arlie D. ;  
REPT. NO. DARCOM-ITC-02-08-76-216

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Machine tools, \*Automation, \*Cost  
analysis, Machine shop practice, Regression  
analysis, Production control, Mathematical models,  
Mathematical prediction

IDENTIFIERS: \*Numerical control

(U)

(U)

A way of determining whether to machine a part by  
numerical control or conventional methods is needed.  
This research was made to develop two cost models,  
one for numerical controlled machining methods and  
one for conventional machining methods. A  
comparison of the costs given by the models will  
determine which machining method is to be used.  
This report found that although there is a  
correlation between these costs and the variables  
used, the models are not accurate for making any  
decisions regarding which machining method to use.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A025 021 5/1

TEXAS A AND M UNIV COLLEGE STATION INST OF STATISTICS

Incorporating Project Cost Considerations  
into Stochastic PERT (Project Evaluation and  
Review Technique).

(U)

DESCRIPTIVE NOTE: Thesis optimization research program.

NOV 75 65P Bienen, Paul P. ; Sietken,  
Robert L. ; Jr.

REPT. NO. T-EMIS-TR-52

CONTRACT: N00014-68-A-0140

PROJ: NR-047-700

## UNCLASSIFIED REPORT

DESCRIPTORS: \*PERT, \*Costs, \*Stochastic processes,  
Linear programming, Scheduling, Computer programs,  
Network flows, Algorithms

(U)

IDENTIFIERS: \*Separable programming, Network  
analysis (Management), Thesis project

(U)

This report extends classical PERT to incorporate  
both random activity durations and project cost  
considerations. Project costs include both planned  
activity costs and penalties for activities exceeding  
their allowed durations. Several problem  
formulations are mentioned, and the determination of  
a minimum cost schedule satisfying a predetermined  
project deadline is discussed in detail. This  
latter problem is formulated as a separable  
programming problem which can be solved by the  
computer algorithm documented in the appendices.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A025 019 19/1 15/5 13/8

DARCOM INTERN TRAINING CENTER TEXARKANA TEX

Applications of Manufacturing Cost Analysis  
and Prediction System to the Production of the  
M13 Tracer.

(U)

DESCRIPTIVE NOTE: Final rept..

MAY 76 93P King, Joseph Gerard :  
REPT. NO. DARCOM-ITC-02-08-76 222

UNCLASSIFIED REPORT

DESCRIPTORS: \*Tracer ammunition. \*Manufacturing.  
\*Cost analysis. Production control. Production  
rate. Production models. Network  
analysis(Management). Manpower utilization  
IDENTIFIERS: M-13 ammunition

(U)  
(U)

Management always has a need for tools which help  
in the analysis of production process. The Army  
spends millions of dollars in the production of  
armaments alone. This research project  
investigated usefulness of MCAP to a production  
process at Lone Star Army Ammunition Plant.  
This report found MCAP to be a promising tool for  
government route.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 816 5/3 5/1

DARCOM INTERN TRAINING CENTER TEXARKANA TEX

Analysis of the Effectiveness of the  
Preproduction Evaluation Contract in  
Preventing Cost Overruns.

(U)

DESCRIPTIVE NOTE: Final rept..

MAY 76 47P Cone, George N.  
REPT. NO. DARCOM-ITC-02-08-76-220

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost Overruns. \*Contracts. High  
costs. Statistical analysis. Test methods.  
Effectiveness. Comparison. Procurement.  
Methodology. Probability. Cost analysis  
IDENTIFIERS: \*Preproduction evaluation  
contracts

(U)  
(U)

This research report examines the cost overrun  
figures for both PPE and conventional contracts.  
It compares the cost of the two types of contracts  
and statistical methods are employed to measure the  
cost overrun differences between them. The  
shortcomings of conventional contracting methods are  
reviewed and the advantages and disadvantages of the  
PPE concept are discussed. The data revealed  
significant differences between the two types of  
contracts examined and recommendations are made as to  
when the more complex PPE concept is justified.  
(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 743 13/8 14/1

DARCOM INTERN TRAINING CENTER TEXARKANA TEX

Investigation of the Cost/Effectiveness of  
Numerical Control Manufacture of Quick  
Reaction Spare Parts.

(U)

DESCRIPTIVE NOTE: Final rept..

APR 76 48P Carter, Joe M. ;  
REPT. NO. DARCOM-ITC-02-08-76-21G

UNCLASSIFIED REPORT

DESCRIPTORS: \*Spare parts. \*Manufacturing. \*Cost  
effectiveness. \*Numerical methods and procedures.  
Control. Production. Quick reaction. Inventory.  
Lead time. Industrial engineering. Inventory  
control

IDENTIFIERS: \*Numerical control

(U)

(U)

This investigation is an attempt to determine the amount of inventory cost reduction that can be obtained by utilizing Numerical Control to produce spare parts. It is also an attempt to determine the parts which will produce the most significant savings. Assuming all parameters of the inventory system to be constant, except leadtime, the sensitivity of inventory cost to leadtime is derived. The elements of leadtime and the capability of Numerical Control to reduce each is presented. Significant conclusions drawn are that any reduction in leadtime will reduce inventory cost, but greater savings stem from those parts having higher demand variances. However, the amount of inventory cost reduction can be greatly dampened by a large administrative leadtime. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 556 19/1 5/3 12/1

ARMY ARMAMENT COMMAND ROCK ISLAND ILL COST ANALYSIS  
DIVModified Cost Estimating Model for 20mm -  
40mm Automatic Cannon Ammunition Initial  
Production Facilities.

(U)

DESCRIPTIVE NOTE: Technical rept..

APR 76 48P Goodall, James F. ;  
REPT. NO. DRSAR-CPE-76-3

UNCLASSIFIED REPORT

DESCRIPTORS: \*Ammunition. \*Cost estimates.  
\*Mathematical models. Costs. Cost analysis.  
Projectiles. Small arms ammunition. Artillery  
ammunition. Cartridge cases. Aluminum. Steel.  
Automatic weapons. High explosive ammunition.  
Incendiary ammunition. Armor piercing ammunition.  
Production engineering. Industrial equipment.  
Tools. Test equipment

(U)

A model to provide cost estimates of initial production facilities (IPF) for a 20mm through 40mm steel-case or aluminum-case family of conventional automatic cannon ammunition is presented in this report. The model is intended to facilitate the preparation of independent estimates in support of decision making early in the acquisition phase. It represents a modified version of previous models over the same size range developed by HQ, ARMC02, Cost Analysis Division, in that different costs among alternative rounds of different calibers and/or component dimensions are generated. The differentiating or adjusting process is based on the premise that production equipment capacities are partially or wholly dependent on the magnitude of certain component dimensions that are known or can be assumed in early estimates. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 389 5/9

ARMY WAR COLL CARLISLE BARRACKS PA

The Training Division: A Good Investment.

(U)

DESCRIPTIVE NOTE: Student essay.  
JAN 76 33P Rappl, Norbert J. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military reserves, \*Cost effectiveness, \*Military training, Surveys, National defense, Economics, Combat readiness, Public opinion, Investments, Organizations

(U)

The Reserve Components have been the subject of much criticism and indeed, there is a genuine question regarding their ability to really perform their mission. However, a study of the history of reserve forces, examination of the laws and regulations governing their organization and training, and an evaluation of past mobilizations, indicates that reserve forces have been vital to the defense of America in the past. Proper utilization will make them a useful and potent force to achieve national goals in the future. This paper discusses one type of reserve unit, the USAR Training Division, its mission, capabilities and potential, together with its demonstrated ability, to illustrate that the training division at least among the reserve components, is a good investment for the American taxpayer.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 251 15/5 J/1

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA COST ANALYSIS GROUP

Air Force Central Supply and Maintenance Cost Data Base FYs 1965-1974.

(U)

DESCRIPTIVE NOTE: Final paper.  
MAR 76 81P McDonald, Francis L. ;  
Palatt, Paul E. ;  
REPT. NO. P-1195  
MONITOR: IDA/HQ 76-18368

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force facilities, \*Depots, \*Cost analysis, \*Logistics management, Maintenance, Weapon systems, Airframes, Engines, Accounting, Air Force equipment, Military supplies

(U)

The paper presents a historical data base suitable for analysis, covering eleven years of Air Force Central and Maintenance (Program VII) Operations and Maintenance appropriations. Ten years of depot maintenance expenses for major Air Force weapon systems are presented by subsystem (airframe, engine, peculiar accessories, and command accessories) and by type of facility. The data have been normalized to FY 1974 dollars and to the FY 1975 Air Force management, organizational and accounting structures. Adjustments have also been made for expenses incurred to repair weapon systems that required maintenance because of Vietnam crash and battle damage.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 140 15/5

GENERAL AMERICAN TRANSPORTATION CORP NILES ILL GENERAL  
AMERICAN RESEARCH DIV

General Guidance for Cost Analysis of  
Commercial and Industrial-Type Real  
Property Maintenance Activities.

(U)

DESCRIPTIVE NOTE: Final rept.,

APR 76 540P Kirby, Jeffrey G. ; Kinkley,  
Michael L. ; Madanoglu, Tuvan ; Henzi, Alan N. ;

CONTRACT: DACAB8-74-C-0050  
PROJ: RDT/E-4-1-162121-A-891  
TASK: 4-A-162121-A-89106  
MONITOR: CERL TR-C-68

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military facilities, \*Army equipment,  
\*Resource management, \*Cost analysis, Management  
planning and control, Specifications, Maintenance,  
Repair, Industrial equipment, Commercial  
equipment

IDENTIFIERS: \*Real property

(U)

(U)

This report presents guidance for cost analysis of  
selected commercial and industrial-type real property  
operation, maintenance, and repair activities. It  
is intended for use by Facilities Engineers or  
their staff. A total of 34 activities, encompassed  
by 17 functional areas, and ranging from utilities  
and paved surfaces to pest control services and  
railroad facilities are included in the scope of this  
report. The guidance--in the form of reference  
specifications--includes expanded definitions of the  
functional areas, definitions of the functional  
activities, definitions of subfunctions within the  
activities, discussions of the methods of estimating  
costs for each subfunction, and tables and worksheets  
for the cost elements pertaining to each subfunction.  
Definitions include a statement of scope, and  
tools, equipment, supplies, materials, and skills  
required for the performance of the activities and  
subfunctions. It is expected that this guidance  
will be used in conjunction with AR 235-5  
(Management of Resources Commercial and  
Industrial Type Functions) in preparing DA  
Form 3207-R.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 014 16/4 9/2 14/1

ARMY WAR COLL CARLISLE BARRACKS PA

Opportunities for Cost Reductions in the  
Testing of New Missile Systems.

(U)

DESCRIPTIVE NOTE: Student essay.

NOV 75 35P Feist, Robert J. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Guided missiles, \*Computerized  
simulation, \*Cost effectiveness, Test methods,  
Mathematical models, Operational effectiveness,  
Weapon system effectiveness, Costs, Reduction  
IDENTIFIERS: \*Cost reduction, Hardware in the  
loop

(U)

(U)

The basic problem addressed is to identify new  
testing methods for the Army's new missile systems  
which can, in the short term, produce at less cost  
the increased quantities of improved quality test  
data required by materiel acquisition decision  
makers. Live trial firings, mathematical modeling  
and hardware-in-the-loop simulations were examined.  
Data was gathered from technical reports, Army  
regulations, staff studies, and personal interviews.  
The traditional testing method, live trial testing  
was found to be increasingly costly as the level of  
system and threat complexity grew. Mathematical  
modeling provided significant advantages, but the  
number of live firings required to develop and  
validate the model approximated the number required  
by a typical missile system test program in which all  
the test data was obtained from live firing. The  
hardware-in-the-loop offered significant advantages  
to both the developer and the tester. It was found  
to offer the best opportunities for cost reduction  
while providing the increased quantities of high  
quality data required. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 881 6/5 5/11 5/3

ARMY WAR COLL CARLISLE BARRACKS PA

A National Health Program.

(U)

DESCRIPTIVE NOTE: Student essay.  
OCT 75 40P Bryant, Albert ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Medical services, \*Insurance, Public health, Legislation, Hospitals, Outpatient clinics, Social welfare, Costs

(U)

IDENTIFIERS: \*National Health Insurance, Medicare, \*Health insurance, \*Health care services, \*Health care costs

(U)

This paper addresses the options and impact of a National Health Program. It suggests what remedies would best solve the steadily accelerating cost of medical care. It points out the weakness of the existing programs. Coverage is devoted to ongoing programs, resources, and actions by Congress, OMB, HEW, VA and DOD. It offers specific directions for the future. The writer concludes that a National Health Insurance Program is needed. Constructive recommendations for the implementation of a National Health Insurance program are presented. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 874 9/2 5/10 14/1 5/1

WHARTON SCHOOL OF FINANCE AND COMMERCE PHILADELPHIA PA  
DEPT OF DECISION SCIENCES (MANAGEMENT)

Data Storage Decisions for Large Data Bases.

(U)

DESCRIPTIVE NOTE: Doctor's thesis.  
FEB 76 279P Weldon, Jay-Louise ;  
REPT. NO. 76-02-04  
CONTRACT: N00014-67-A-0216-0007  
PROJ: NR-049-272

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Information systems, \*Decision making, \*Data bases, \*Cost analysis, \*Data storage systems, \*Information sciences, Computers, Data processing, Configurations, Methodology, Systems analysis, Housing (Dwellings), Population, Data management, Data compression, Performance (Engineering), Theses

(U)

IDENTIFIERS: \*Data base configuration model, DBCM (Data configuration model), Design, Measures of effectiveness, Decision model

(U)

This dissertation presents a systematic methodology for making configuration decisions for large data bases. For each phase of the methodology, informal and operational decision aids are provided. The primary design tool described is an interactive Data Base Configuration Model (DBCM). This model was developed to aid the data base designer in evaluating and comparing the cost and performance of alternative configurations. The methodology is illustrated by its applications to the configuration of a large data base: the 1970 Census of Population and Housing.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 836 1/3 15/5

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO PRAM  
PROGRAM OFFICE

On High Support Costs and Poor  
Reliabilities in Air Force Aircraft  
Equipments.

(U)

DESCRIPTIVE NOTE: Final rept.,

MAR 76 18P Genet, Russell M. ; Hall, S.  
Woodrow, Jr.;  
REPT. NO. ASD/RAXA-76-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military aircraft. \*Aircraft  
equipment. \*Cost analysis. \*Logistics management.  
Logistics support. Costs. Reliability. Air  
Force procurement. Air Force budgets. Air  
Force planning

(U)

Common statements and opinions about the 'high  
support costs and poor reliabilities' of items of  
aircraft equipment are discussed. A distinction is  
made between statements that are objectively  
confirmable, at least in theory, and those that must,  
by their nature, remain forever subjective. For  
those statements where objective confirmation is  
possible, the outline of an analytic approach aimed  
towards reaching such objectivity is offered.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 835 1/3 15/5

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO PRAM  
PROGRAM OFFICE

Reducing Support Costs and Improving  
Reliabilities/Availabilities of Air Force  
Aircraft Equipment.

(U)

DESCRIPTIVE NOTE: Final rept.,

APR 76 27P Genet, Russell M. ; Hall, S.  
Woodrow, Jr.; Spray, Gordon W. ;  
REPT. NO. ASD/RAXA-76-4

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military aircraft. \*Aircraft  
equipment. \*Cost analysis. \*Logistics management.  
Logistics support. Costs. Reliability. Air  
Force procurement. Air Force budgets. Air  
Force planning

(U)

Common statements and opinions about the 'high  
support costs and poor reliabilities' of items of  
equipment are discussed. A distinction is made  
between statements that are objectively confirmable,  
at least in theory, and those that must, by their  
nature, remain forever subjective. For those  
statements where objective confirmation is possible,  
an analytic approach aimed towards reaching such  
objectivity is outlined. Logical remedies for  
severe cases are suggested. A program for analysis  
and subsequent actions is outlined. Specific  
program tasks are delineated.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 834 1/3 15/5

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO PRAM  
PROGRAM OFFICEOn the Reduction of Operating and Support  
Costs of Air Force Aircraft.

(U)

DESCRIPTIVE NOTE: Final rept..

MAR 75 20P Genet, Russell M. ;  
REPT. NO. ASD/RAXA-76-3

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military aircraft, \*Air Force  
procurement, \*Costs, Air Force planning,  
Logistics support, Air Force budgets, Logistics  
managementIDENTIFIERS: Operating costs, Life cycle  
costs

(U)

(U)

Conceptual approaches and difficulties involved in  
reducing the operating and support costs of Air  
Force aircraft are discussed.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 830 14/3 15/5

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO PRAM  
PROGRAM OFFICELCC Analysis of Flight Recorder for F-4  
Wild Weasel Aircraft.

(U)

DESCRIPTIVE NOTE: Final rept..

APR 76 7P Weitzler, Thomas D. ;  
REPT. NO. ASD/RAXA-76-6

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Flight recorders, \*Cost analysis,  
Jet fighters, Life cycle costs, Selection

(U)

IDENTIFIERS: F-4 aircraft

(U)

This report briefly summarizes a basic life cycle  
cost effort on two flight recorders. It discusses  
the background, approach, results, and conclusions of  
the study.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 750 13/13 14/1

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN  
ILLIndustrialized Building Construction Time/  
Cost Model - First Quarter FY 76  
Results.

(U)

DESCRIPTIVE NOTE: Interim rept.,  
APR 76 31P Poskus, K. K. :  
REPT. NO. CERL-IR-D-66  
PROJ: DA-4-A-762719-ATA-1  
TASK: 4-A-762719-ATA-101

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Modular construction, \*Cost analysis,  
Prefabrication, Models, Construction, Time,  
Delivery, Questionnaires, Statistical analysis,  
Surveys, Housing projects, Prefabricated  
buildings

(U)

IDENTIFIERS: Mobile homes, \*Industrialized  
building

(U)

The time/cost project was developed as a means of comparing the cost and delivery time of industrialized building with that of conventional building to form a basis for selecting the best type of facility construction. A new cost-estimating procedure was needed to provide cost estimates for industrialized building without reference to drawings or specifications. This report describes the results of a July 1975 survey administered to a sample of industrialized builders of housing products. The survey was designed to find those variables which could predict differences in the cost and delivery time of housing products. The statistical summaries of the three major types of housing producers (panelized, modular, mobile) are presented, along with tests for the significance of differences in physical plant, production time, and employee characteristics. A followup questionnaire was sent to respondents to clarify confusion in the 'skilled' versus 'unskilled' classification of employees. Since the survey did not contain a sufficient diversity of material types of erection time data to yield the anticipated results, this report discusses the future direction for the project. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 530 5/1 15/5

AIR FORCE CONTRACT MAINTENANCE CENTER WICHITA KANS  
DETACHMENT 21An Evaluation of Material Cost Escalation  
Impact on Proposals at Boeing Wichita.

(U)

DESCRIPTIVE NOTE: Final rept.,  
NOV 74 70P Ziegler, B. Alan :

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Materials,  
\*Contracts, \*Air Force procurement,  
Inflation/economics, Cost estimates, Metals,  
Data processing

(U)

IDENTIFIERS: Price indexes

(U)

The report presents a study of material escalation factors at the Boeing Company, Wichita Division. The purpose was to set forth recommendations for allowable rates of material cost escalation for proposals submitted to the Air Force Pricing Analysis Division at Det 21, AFMCO (AFLC). The report gives an overview of the contemporary situation and presents a methodology for developing a recommended allowable rate of material cost escalation. Subjects covered include materials usage, material cost indicators, method of analysis (historical data collection, regression, and subjective analysis), data base construction, and a description of the quantitative analysis performed.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 442 14/1 12/1

ILLINOIS UNIV AT URBANA-CHAMPAIGN COORDINATED SCIENCE  
LABPerformance/Cost Evaluation of Pipelined  
Cordic Function Units.

(U)

DESCRIPTIVE NOTE: Technical rept..

JAN 76 62P Hughes, Richard James :  
REPT. NO. R-707, UIIU-ENG-75-2243  
CONTRACT: DAAB07-72-C-0259

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis,  
\*Functions(Mathematics), Algorithms,  
Pipelines, Integrated circuits, Specifications,  
Arrays, Ratios, Performance (U)  
IDENTIFIERS: Trigonometric functions, \*Performance  
cost ratio, Cordic functions, Pipelined systems (U)

To measure the desirability of a function unit, the performance/cost ratio is used. The performance/cost ratio is the number of functions that can be initiated per second divided by the cost of the function unit. The cost is considered to be only the cost of the integrated circuits needed to implement a design. It does not include the cost of the interface, power supplies, circuit boards or wiring. A simple model can be constructed, however, to include these costs. Several types of structures are used to implement the cordic algorithm. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 416 1/3 14/2 11/4 11/6

GENERAL DYNAMICS/FORT WORTH TE FORT WORTH DIV

Integration of Hybrid Structure into Low-  
Cost Aircraft Design - Rationale and  
Methodology.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Dec 74-30 Jun 75.  
DEC 75 357P Brents, T E.; Bridges, J.  
H.

CONTRACT: F33615-75-C-3029

PROJ: AF-1207

TASK: 120701

MONITOR: AFFDL TR-75-124

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft, \*Airframes, \*Alloys,  
\*Composite materials, \*Low costs, Hybrid systems,  
Systems engineering, Life cycle costs, Weight  
reduction, Structural properties, Maintainability,  
Manufacturing, Metals, Nonmetals, Cost analysis,  
Base lines, Jet fighters, Methodology (U)  
IDENTIFIERS: F-16 aircraft, Epoxy matrix  
composites, Carbon fiber reinforced plastics,  
Graphite reinforced composites (U)

IAC ACCESSION NUMBER: MCIC-096312

IAC DOCUMENT TYPE: MCIC -HARD COPY--

This report contains the rationale and methodology for using a blend of advanced metallics and advanced composites in the design of low-cost, low-weight aircraft. A systems engineering approach is developed via an example using a previously designed fighter aircraft as a baseline. The criteria for improvement is low life-cycle-costs for derivatives of the baseline aircraft that meet the specific performance measures. The rationale and methodology displayed pertains to the use of structural materials and associated manufacturing processes for airframe construction. The emphasis is on cost related decisions made during the conceptual design phase. This report contains a description of the salient properties of materials, typical material applications, and a description of the manufacturing processes associated with the materials. The rationale and methodologies described can be used for conceptual design of all types of aircraft. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 406 9/2 14

RAND CORP SANTA MONICA CALIF

Privacy Protection in Databanks:  
Principles and Costs,

(U)

SEP 74 23P Turn, Rein :  
REPT. NO. P-5296

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Data processing security, \*Data banks,  
\*Cost analysis, Computers, Protective equipment,  
Protection, Costs, Maintenance, Management  
planning and control, Cryptography, Computer files,  
Subroutines (U)IDENTIFIERS: \*Privacy, \*Computer information  
security, \*Computer privacy, \*Personal privacy (U)

Every databank system that contains identifiable personal information requires adequate procedural and technical means for (1) safeguarding the data subjects' rights; (2) maintaining confidentiality of selected records; (3) preserving data integrity; (4) providing data security against unauthorized access and modification; and (5) assuring compliance with the protection requirements. The specific design of each of the above components of the protection system depends on the purpose and functions of the databank system, the nature of the personal information stored and processed, the applicable statutory requirements, and the structure and capabilities of the computer system associated with the databank. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 223 17/2 14/1 15/3 12/2

JCINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint  
Tactical Communications. Volume III. Life  
Cycle Costing. Appendix E. Transportation  
Cost of Spares and Repair Parts.

(U)

FEB 75 13P  
REPT. NO. ITQ-ORT-032-75-Vol-3-app-e

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A022 062.

DESCRIPTORS: \*Tactical communications, \*Cost  
effectiveness, Spare parts, Logistics support,  
Life cycle costs, Communication equipment, Costs,  
Joint military activities (U)

IDENTIFIERS: Transportation models (U)

The purpose of the appendix is to present an equation for transportation costs which is sensitive to the weight of the item, the distance traveled and the postulated logistic support concept. The equation is obtained by mathematically combining two models (a) the transportation paths that the spares and failed/repared items traverse and (b) the probabilities or percentages associated with each of four possible transportation paths. This cost element is concerned only with the transportation of spares, repair parts and failed/repared items during the operation and support phase of the life cycle of the TRI-TAC systems. (U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A023 080 1/2 5/3 1/3

ARINC RESEARCH CORP ANNAPOLIS MD

Cost Analysis of Airborne Collision  
Avoidance Systems (CAS) Concepts.

(U)

DESCRIPTIVE NOTE: Final rept.,

DEC 75 279P Kowalski, Stanley ; Hasepert, J.

Kent ; Witt, James ;

REPT. NO. 1306-01-1-1479

CONTRACT: DOT-FA74WA-3506

MONITOR: FAA-EM 76-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Collision avoidance, Airborne, \*Cost analysis, \*Aircraft equipment, Aviation accidents, Aircraft equipment, Commercial aviation, Commercial aircraft, Military aircraft, Civil aviation, Life cycle costs, United States Government, Policies, Electronic equipment, Airborne, Installation, Inflation(Economics), Reliability(Electronics), Computer Programs, Mathematical models, Feasibility studies

IDENTIFIERS: \*Collision avoidance systems, CAS system, Avoids system, EROS system, Secant system, CAS(Collision avoidance systems)

(U)

(U)

This report presents the results of the cost and operational evaluations developed for three CAS Concepts: the Honeywell AVOIDS, the McDonnell Douglas EROS, and the RCA SECANT. To provide a basis for assessing the economic impact of CAS on the various aviation communities, separate cost evaluations have also been developed for general aviation, commercial aviation, and the military. This report presents the expected cost of ownership to the individual aircraft owner and the cumulative life-cycle costs to the user communities, based on the competing manufacturers' data and independently developed electronics and installation cost data. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 794 5/3 9/2

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO

Historical and Forecasted Aeronautical Cost  
Indices.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUN 74 SSP Lentzsch, Craig ; Bandt,

William D. ;

REPT. NO. ASD-Cost research-110a-rev

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of report dated May 73.

DESCRIPTORS: \*Cost estimates, \*Indexes, \*Computer aided instruction Forecasting, Air Force procurement, Avionics, Aircraft equipment, Linear regression analyses, Forecasting, Graphics

IDENTIFIERS: Gross National Products

(U)

(U)

This report presents both historic and forecasted aerospace cost indices for cost estimators at the Aeronautical Systems Division, Wright-Patterson AFB, Ohio. Utilizing both Bureau of Labor Statistics and ASD Cost Library data, historical cost indices for six segments of the aerospace industry were developed. The segments are airframe development, airframe production, engine development, engine production, avionics development and avionics production. These data are applicable to ASD programs from 1958 to 1972 and provide one input into the forecasting of future indices for these segments. The forecasts cover the ten-year period, 1973 through 1982. The historical data was correlated with the history of the GNP deflator and this exercise was combined with the Wharton Econometric Forecasting Unit predictions of the GNP deflator for the next ten years to produce the forecasted numbers. Instructive examples of the use of these indices in constructing escalation factors and then in the use of these factors to adjust cost estimates are presented. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 793 5/3 9/2

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO

A Cost Performance Forecasting Concept and Model.

(U)

DESCRIPTIVE NOTE: Final rept..  
 NOV 74 50P Karsch, O. Arthur :  
 REPT. NO. ASD-Cost Research-117

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Computer programs,  
 Forecasting, Computer aided instruction,  
 Statistical samples, Cost analysis, Linear  
 regression analyses, Cost models, Subroutines

(U)

This report identifies and illustrates the principles of a new and potentially valuable cost forecasting method. It is the objective of the technique to forecast Estimates At Completion (EACs) each month, utilizing data available in the Cost Performance Reports (CPRs). A single sample was used as a uniform data base for comparing the consequences of various methods. These methods are the linear extrapolation of percent cumulative cost variance and unconstrained and constrained regression analysis applied to an exponential relationship.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 792 5/3 9/2

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO

Computer Program Input Instructions for Cost Performance Forecasting Model.

(U)

DESCRIPTIVE NOTE: Final rept..  
 FEB 75 24P Karsch, O. Arthur :  
 REPT. NO. ASD-Cost Research-117A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programs, \*Cost estimates,  
 \*Computer aided instruction, Input output devices,  
 Cost models, Subroutines, Forecasting, Punched  
 cards, Keyboards

(U)

The Computer program is intended for use in developing independent Estimates at Completion (EACs) for ongoing projects/programs. The information contained in this paper is intended to provide the program user a set of simplified key punch instructions. These instructions plus a minimum knowledge of Fortran would enable the user to input the program.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 789 6/5 5/9 14/1

BOEING COMPUTER SERVICES INC SEATTLE WASH THE CONSULTING DIV

Navy Medical Care Study: Alternatives to a Physician Shortfall.

(U)

DESCRIPTIVE NOTE: Rept. for Sep 74-Mar 75.

MAR 75 114P Waggoner, John J. ; Rahm,

Michael ; Powell, John H. , Jr;

CONTRACT: N00014-73-C-0341

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD782 569, AD-782 571 and AD-A022 788.

DESCRIPTORS: \*Medical services. \*Manpower. \*Cost analysis. \*Medical personnel. Navy. Physicians. Shortages. Naval planning. Personnel management. Naval budgets. Allocations. Resource management. Military medicine. Health care facilities. Economic analysis. Insurance. All volunteer. Naval personnel. Military dependents. Civilian personnel

(U)

IDENTIFIERS: Workloads. Health insurance. CHAMPUS (Civilian health and medical program of the uniformed forces). Civilian health and medical program of the uniformed forces. Resource allocation

(U)

The probable magnitude of a shortfall of Navy physicians below programmed strength is analyzed. Alternative methods of providing medical care under shortfall conditions are examined for feasibility. Cost analysis is performed on feasible alternatives. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 788 6/5 14/1 5/9

BOEING COMPUTER SERVICES INC SEATTLE WASH THE CONSULTING DIV

Navy Medical Care Study: Planning and Programming.

(U)

DESCRIPTIVE NOTE: Rept. for Jan-Aug 74.

AUG 74 115P Waggoner, John J. ; McCarty,

Ken W. ;

CONTRACT: N00014-73-C-0341

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Appendices dated Aug 74. AD-A022 789.

DESCRIPTORS: \*Medical services. \*Cost analysis. \*Manpower. \*Medical personnel. Military medicine. Navy. Health care facilities. Insurance. Economic analysis. Regression analysis. Naval planning. Naval budgets. Job analysis. Mathematical prediction. Dentists. Physicians. Resource management. Patients. Dentistry. Surgery. Naval personnel. Civilian personnel. Military dependents. Demography

(U)

IDENTIFIERS: Workloads. Surgeons. CHAMPUS (Civilian health and medical program of the uniformed services). Civilian health and medical program of the uniformed services. Health insurance. \*Health care costs

(U)

The relationship between the size and composition of beneficiary populations and output levels is analyzed in detail. The results indicate that workload projections can be made accurately based on the size and growth of different population segments. Further cost analysis is performed to determine the total and marginal costs of medical care applicable to various program elements and appropriation categories. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 787 6/5 14/1 5/9

BOEING COMPUTER SERVICES INC SEATTLE WASH THE CONSULTING DIV

Navy Medical Care Study. Planning and Programming. Appendices.

(U)

DESCRIPTIVE NOTE: Final rept. for period ending Aug 74.  
AUG 74 130P Waggoner, John J. ; McCarty, Ken W. ;

CONTRACT: N00014-73-C-0341

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Appendices to report dated Aug 74.  
AD-A022 788.

DESCRIPTORS: \*Medical services. \*Cost analysis.  
\*Manpower. Medical personnel. Military medicine.  
Navy. Health care facilities. Insurance.  
Economic analysis. Regression analysis. Naval  
planning. Naval budgets. Resource management.  
Mathematical prediction. Naval personnel. All  
volunteer. Civilian personnel. Military dependents.  
Retirement (Personnel). Active duty.  
Demography. Statistical data

IDENTIFIERS: CHAMPUS (Civilian health and medical  
program of the uniformed forces). Civilian health  
and medical program of the uniformed forces. Health  
insurance

(U)

(U)

Contents: Explanation of Analytical  
Techniques Used to Quantify Cost Behavior -  
- Regression analysis, Cost behavior models.  
Data sources, and Results and Interpretation:  
Navy Health Care Beneficiary Populations:  
Cost of Retirement; Bureau's Expense  
Operating Budget Structure; EOB Expense  
Data by NIC and Cost Center; and Expense  
By Program Element UIC and Appropriation  
Category.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 311 13/10 14/1

NAVAL SHIP ENGINEERING CENTER HYATTSVILLE MD

Marginal Cost Factors for Surface Combatant  
Ships.

(U)

MAR 76 41P Howell, Jay Stanley . Jr. ;  
Graham, Clark ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Annual Technical  
Symposium (131st). Association of Scientists and  
Engineers of the Naval Air and Sea Systems  
Commands. 12 Mar 76. Arlington, Va.

DESCRIPTORS: \*Naval vessels. \*Cost analysis.  
\*Surface ships. Computerized simulation. Marine  
engineering. Weighting functions. Variations.  
Weapons. Space (Room). Cruisers. Destroyers.  
Frigates. Electronic equipment

(U)

IDENTIFIERS: \*Marginal costs. Design

(U)

The concept of utilizing marginal cost factors to  
determine the overall ship impact of design features  
is examined. The assumption is made that the design  
parameters for a feature such as the addition of a  
piece of equipment can be broken down into  
requirements for weight, space, manning and  
electrical power and that these requirements are  
linearly superimposable. Marginal weight factors  
in terms of changes in ship displacement were  
generated utilizing a computerized ship synthesis  
model. The validity of utilizing marginal weight  
factors to predict the overall weight impact on a  
ship was confirmed through a comparison with weight  
impact predicted directly by the synthesis model.  
The overall conclusion of the study was that the  
concept of marginal cost factors is valid for  
predicting the impact of design changes on naval  
ships. However, a considerable amount of work  
remains before the technique can be universally  
implemented throughout the design community.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 307 14/2 14/1 5/9

NAVAL MATERIAL COMMAND WASHINGTON D C

Automatic Testing, A Tool for Improving  
Fleet Readiness.

MAR 76 17P Neumann, George W. :

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Annual Technical  
Symposium (13th), Association of Scientists and  
Engineers of the Naval Air and Sea Systems  
Commands, 12 Mar 76, Arlington, Va.

DESCRIPTORS: \*Test equipment, \*Cost analysis.

\*Automation, \*Manpower, Automatic,  
Fleets(Ships), Operational readiness,  
Reduction, Costs, Environments, Monitors,  
Minicomputers, Standardization, Microprocessors,  
Reliability

IDENTIFIERS: ATE(Automatic Test Equipment),  
Automatic test equipment, Self test equipment,  
Built in test equipment

During the last few years the realization that  
automatic testing is a convenient tool for reducing  
manpower and costs has become apparent. However, if  
the application of automation is not properly done,  
the end result can actually increase costs and cause  
many other problems. This paper discusses Navy  
problems in automatic testing and some remedies.  
Included will be a discussion of the following  
topics: (1) An RDT and E program for  
development of automated testing techniques; (2)  
Selection and acquisition of the proper Automatic  
Test Equipment (ATE) (i.e. built-in, special  
purpose, general purpose, self-test); (3)  
Problems in acquiring ATE software; (4)  
Standardization of ATE; and (5)  
Description of available organizations, tools and  
aids to assist in acquiring and applying ATE  
(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 296 18/9

RAND CORP SANTA MONICA CALIF

Comments on LMFBR Cost-Benefit Analysis

(U)

AUG 75 22P Alexander, Arthur J. :Rice,  
Donald B. :  
REF. NO. P-5496

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Liquid Metal Fast  
Breeder Reactor program.

DESCRIPTORS: \*Breeder reactors, \*Cost benefits,  
Learning curves, Decision making

(U)

IDENTIFIERS: \*Liquid metal fast breeder reactors,  
\*Benefit cost analysis

(U)

This review of the cost-benefit analysis of the  
LMFBR is in three sections, each of which looks at  
the issue from a somewhat different perspective.  
The first section examines several of the most  
important assumptions and detailed projections which  
underlie the analysis. Section II reviews the  
role of cost-benefit analysis as a tool for  
decisionmaking in the LMFBR case, based on the  
analysis contained in the PFEIS and on the  
modifications suggested by our review. Based on a  
synthesis of these findings, the third section  
suggests some guides for future policy.

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AD-A022 296

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A022 195 14/1 5/3

RAND CORP SANTA MONICA CALIF

A Critique of Cost-Effectiveness.

(U)

NOV 75 9P Guade, E. S. :  
REPT. NO. P-5524

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the session on Cost-Effectiveness, ORSA/TIMS, 17 Nov 75, Las Vegas, Nev.

DESCRIPTORS: \*Cost effectiveness. \*Economics. Cost analysis. Decision making. Deficiencies. Economic analysis. Methodology. Comparison. Assessment. Cost benefits

(U)

It is important that a decision take into account all the relevant information whether or not this information lends itself to inclusion in formal analysis. All forms of analysis have their virtues and drawbacks. None can take into consideration or present all the information. A single cost-effectiveness calculation leaves out a great deal but it does emphasize the aspects that are usually the most important and of greatest interest to the decisionmaker. It gives excellent results provided the alternatives are reasonably similar and seek the ultimate goal through the same target so that their effectiveness in attaining that target can be measured on the same scale. Cost-benefit analysis can take into account many more aspects of a decision but it does so at the expense of emphasis and through a great deal of heroic quantification that is extremely arbitrary and, where values are concerned, is based on the judgment of the wrong people. Multiple cost-effectiveness calculations, including some that do not translate all costs into monetary units obviously go farther in taking things into account than the traditional single comparison that we often think of when we say cost-effectiveness analysis. It has the additional advantage that it not only forces the judgment on the right people but calls their attention to which judgments are needed. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A022 191 5/3 5/1

RAND CORP SANTA MONICA CALIF

Cost Considerations in Policy Analysis.

(U)

NOV 75 12P Fisher, G. H. :  
REPT. NO. P-5534

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Cost Analysis Techniques in Operations Research session of the National ORSA/TIMS, 17 Nov 75, Las Vegas, Nev.

DESCRIPTORS: \*Cost analysis. \*Policies. Cost benefits. Cost estimates. Efficiency. Effectiveness. Management planning and control. Economics. Decision making

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 115 15/3 15/5 5/9

OPERATIONS RESEARCH INC SILVER SPRING MD

Naval Reserve Annual Operating Costs.

(U)

DESCRIPTIVE NOTE: Final rept 16 Aug 74-30 Jun 75.

OCT 75 234P

Mason, Robert T. ; Daniels,

Parmely M. ; McDermott, Michael N. ;

REPT. NO. ORI-TR-932

CONTRACT: N00014-75-C-0086

PROJ: NR-043-194

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military reserves, \*Navy, \*Cost estimates, Naval operations, Maintenance, Naval personnel, Naval logistics, Logistics support, Naval research, Mathematical models

IDENTIFIERS: Cost models

(U)

(U)

The report describes an analytical study effort conducted by Operations Research, Inc. (ORI) aimed at enhancing the Navy Resource Model (NARM) with respect to its ability to generate estimates of the costs associated with the Naval Reserve. There are two general products resulting from ORI's endeavors: (1) Information concerning the numbers, types, and composition of all of the various units in the Naval Reserve; equations for generating estimates of personnel costs, hardware costs, and support costs; and suggested report formats for displaying the costs of the Naval Reserve by program element and Naval Reserve program. (2) A computerized model which rapidly and consistently generates: (a) RPN 'factors' that consider the number of authorized paid drills, and (b) estimates of the RPN budget which consider the units' manning.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 086 1/3 14/1 12/1

RAND CORP SANTA MONICA CALIF

Parametric Equations for Estimating Aircraft Airframe Costs.

(U)

DESCRIPTIVE NOTE: i term rept..

FEB 76 154P

Large, Joseph P. ; Campbell,

Harry G. ; Cates, David ;

REPT. NO. R-1693-1-PA/E

CONTRACT: DAH015-71-C-0220

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supplement to report dated May 75.

AD-A013 258.

DESCRIPTORS: \*Cost estimates, \*Airframes, \*Equations, Aircraft, Costs, Flight testing, Data acquisition, Quality control, Manufacturing, Manhours, Weight, Time, Prototypes, Regression analysis, Labor

IDENTIFIERS: \*Parametric equations, Tooling

(U)

(U)

A set of generalized equations for estimating development and production costs of aircraft airframes on the basis of such characteristics as aircraft weight and speed. (Extensive investigation has shown that these characteristics explain cost variations better than any other objective parameters.) Equations derived by multiple-regression techniques are presented for each of the major cost elements, for total program cost, and for prototype development costs. The report explains the derivation of each equation and describes the treatment of the data, the fitting of regression equations, and selection of preferred equations. A detailed numerical example is included which applies to preferred equations and compares the results to those obtained using several sets of alternative equations. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 944 5/9 5/1

AIR FORCE ACADEMY COLO

The Deterioration of Pension Plan  
Conditions in Large Corporations: The  
Need for More Extensive Disclosure.

(U)

DESCRIPTIVE NOTE. Final rept.,  
FEB 76 32P Fletcher, John C.; Wilcox,  
Kirkland A.;  
REPT. NO. USAFA-TR-76-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Retirement(Personnel),  
\*Corporations, \*Cost analysis, Fringe benefits,  
Difficulty, Accounting, Legislation, Statistical  
data, Modification

IDENTIFIERS: \*Pensions, Economic surveys

(U)

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This paper describes a field study undertaken to  
determine the significance of pension plans.  
Recent deterioration in the conditions of selected  
plans and the need for more extensive disclosure are  
discussed. The results of a questionnaire survey  
are analyzed. A new disclosure format is  
recommended.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 913 14/1 20/6 1/3 9/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The A-7 ALOFT Cost Model: A Study of  
High Technology Cost Estimating.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
DEC 75 271P Johnson, Donald Lloyd;  
Knobloch, Earle William;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Fiber optics,  
\*Cost estimates, Economic analysis, Technology,  
Mathematical models, Naval planning, Circuit  
interconnections, Avionics, Cost analysis, Attack  
bombers, Navigation, Aircraft fire control systems,  
Comparison, Coaxial cables, Data links, Delphi  
techniques, Economic models, Forecasting,  
Uncertainty, Theses

(U)

IDENTIFIERS: ALOFT(Airborne Light Optical  
Fiber Technology), Airborne light optical  
fiber technology, A-7 aircraft

(U)

This analytical study contains the development of  
an appropriate life cycle cost (LCC) model for the  
A-7 Airborne Light Optical Fiber  
Technology (ALOFT) system. The model was  
developed to support an A-7 ALOFT economic  
analysis which will compare the total systems costs  
and performance benefits of an A-7 fiber optic  
linked navigation and weapons delivery system to  
existing or proposed wire interconnect designs.  
Major features of this study include the  
development of: (1) A process to derive cost  
estimates of a high technological development in the  
early conceptual stage; (2) An appropriate  
LCC model for the A-7 ALOFT economic analysis;  
and (3) Fiber optic costing methodology to  
support the LCC analysis. This analysis is a  
follow-on study to An Approach to the  
Estimation of Life Cycle Costs of a Fiber  
Optic Application in Military Aircraft AD-  
A019 379.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 900 14/1 15/3

OFFICE OF THE COMPTROLLER OF THE ARMY WASHINGTON D C  
DIRECTORATE OF COST ANALYSIS

Army Life Cycle Cost Model; User's  
Guide. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JAN 76 129P Brannon, Richard C. ;  
REPT. NO. DCA-R-15-Vol-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Life cycle costs, \*Cost estimates,  
\*Weapon systems, \*Army procurement, Computerized  
simulation, Cost analysis, Time sharing, Cost  
effectiveness, Parametric analysis, Army equipment,  
Costs, Inflation(Economics), Army planning,  
Army budgets, Trade off analyses, Input output  
processing

(U)

This document describes the Army Life Cycle  
Cost Model, a time sharing cost model which  
produces both static and time phased parametric cost  
estimates for major weapons systems. The output  
reports conform to the latest Research and  
Development, Investment, and Operating and  
Support pamphlets.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 740 17/2 14/1

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint  
Tactical Communications. Volume IA.  
Management Overview.

(U)

DESCRIPTIVE NOTE: Final rept.  
NOV 75 28P  
REPT. NO. JTC-ORT-032-75-Vol-1-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of report dated Dec 73.  
See also Volume 2, AD-A003 279.

DESCRIPTORS: \*Tactical communications, \*Cost  
effectiveness, Trade off analyses, Life cycle costs,  
Joint military activities Logistics support,  
Planning

(U)

The report presents an overview for management  
purposes of a program to develop and implement  
concepts of cost effectiveness analysis to be used  
for architectural design, integrated logistic  
support, economic analyses, and equipment program  
trade-off studies involved in the development and  
acquisition of joint tactical communication systems,  
subsystems, and equipment. The fundamental concepts  
used for estimating life cycle costs and measures of  
effectiveness of TRI-TAC development and  
acquisition programs are briefly described. The  
report also presents a plan of action involving the  
Services/Agencies which is necessary to implement  
these cost effectiveness concepts and  
methodologies.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 717 15/5 5/1

DARCOM INVENTORY RESEARCH OFFICE PHILADELPHIA PA

Inventory Costs at US Army Materiel  
Command Depots.

(U)

DESCRIPTIVE NOTE: Final rept.,  
DEC 75 30P Deemer, Robert L. ;  
REPT. NO. IRO-235

UNCLASSIFIED REPORT

DESCRIPTORS: \*Supply depots. \*Logistics management.  
\*Cost analysis. \*Inventory control. Army budgets.  
Army procurement. Army planning. Storage.  
Inventory. Inventory analysis. Tables(Data).  
Regression analysis. Equations

(U)

The holding cost rate and the cost of ordering  
stock from the Inventory Control Points are  
estimated as they apply to supply management  
activities of the Installation Supply Accounts  
of the AMC Depots. These costs are used to  
compute the inventory levels for the Economic  
Inventory Procedure Tables of AR 710-2 that  
are used by the depots. The costs are composed of  
several constituent functions which are the dependent  
variables in a regression analysis. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 712 13/8 14/1 5/4 9/2

RAND CORP SANTA MONICA CALIF

Measurement of Technological Innovation by  
Firms.

(U)

SEP 75 30P Harman, Alvin J. ;  
REPT. NO. P-5496

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Econometric  
Society World Congress (3rd). Aug 75. Toronto  
(Ontario).

DESCRIPTORS: \*Quality control. \*Computers.  
\*Machine tool industry. \*Cost effectiveness.  
\*Economic models. Industrial production.  
Creativity. Technology. Economics. Scientific  
research

(U)

IDENTIFIERS: \*Technological change. \*Product  
improvement. \*Cost reduction. \*Technological  
innovation. \*Econometrics

(U)

The specific objective of this paper is to describe  
the preliminary results of our theoretical model  
development and our approach to measuring product  
quality change in the computer and machine tool  
industries.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 263 14/4 1/3 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Evaluation of F-16 Subsystem Options  
Through the Use of Mission Completion  
Success Probability and Designing to System  
Performance/Cost Models.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 75 255P Doman, Allan M.; Dunkerley,

Alan G.;

REPT. NO. GSM/SM/75D-13

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
DESCRIPTORS: \*Jet fighters, \*Reliability, \*Cost  
estimates, \*Air Force procurement, Failure,  
Probability, Mission profiles, Abort, Cost  
analysis, Logistics management, Design to cost,  
Mathematical models, Maintainability, Theses  
IDENTIFIERS: Cost models, Life cycle costs, F-16  
aircraft

(U)

(U)

The Mission Completion Success Probability (MCSP) and Designing to System Performance/Cost (DSPC) models developed by the Office of the Assistant for Study Support provide the program manager with a quantitative method of analysis to aid in reliability management. The MCSP model calculates the probability of mission completion without an abort-causing failure of a subsystem. In addition, it produces a ranking of subsystems identifying those most likely to cause aborts, and performs a sensitivity analysis on non-redundant subsystems. The DSPC model analyzes combinations of subsystem options to define those options which lead to a higher MCSP at lower cost. Various optimal configurations are presented, allowing trade-offs of MCSP for different acquisition costs, logistic support costs, or total costs. When combined with the MCSP results, the DSPC model extends the methodology for applications to life cycle cost analysis.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 258 15/5 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Evaluation of F-15 Operations and Maintenance  
Costs Based on Analysis of Category II  
Test Program Maintenance Data.

(U)

DESCRIPTIVE NOTE: Master's thesis.

AUG 75 179P

REPT. NO. GS7/SM/75S-3 Howard, Christopher B.;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Jet fighters, \*Cost analysis,  
\*Maintenance, Regression analysis, Failure,  
Reliability, Mathematical models, Cost estimates,  
Air Force procurement, Theses  
IDENTIFIERS: Cost models, Life cycle costs, F-15  
aircraft

(U)

(U)

The report contains an analysis of the maintenance data collected as part of the F-15 Category II test program from April 1974 through February 1975 with the intent of updating operations and maintenance cost predictions. A brief review of the Systems Effectiveness Data System is included to provide background on the source of the raw maintenance data. This is followed by an analysis of maintenance man-hours per flight hour (MMH/FM) trends based on regression analysis to determine the expected operational maintenance requirements. Failure data are analyzed to determine system and subsystems reliability. Two reliability models are used for this analysis: an exponential model which assumes a constant instantaneous failure rate, and a Weibull model which can represent either an increasing or a decreasing failure rate.

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AD-A021 258

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 210 13/10

ARCTEC INC COLUMBIA MD

Winter Rate Study for Great Lakes-St.  
Lawrence Seaway System. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept.,

DEC 75 123P Kotras.T. ;Peter.J. ;

REPT. NO. 00246-C-3

CONTRACT: DACW23-75-C-0043

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Inland waterways, \*Ice formation,  
\*Marine transportation, \*Cost analysis, Winter,  
Shipping, Rates, Time studies, Great Lakes,  
Computer programming

(U)

IDENTIFIERS: \*Ice navigation, \*Saint Lawrence  
Waterway

(U)

This study is phase 2, part B of the Great Lakes-St. Lawrence Seaway Navigation System Study. Objectives were twofold: (1) to estimate total transit time for ships navigating the Great Lakes-St. Lawrence Seaway system during a winter season and translate these times into vessel operating costs and annual freight rates for major commodity routes, and (2) to estimate effect on these annual freight rates of improvement levels, length of navigation season, winter severity, and vessel fleet mix. A computer model of Great Lakes-St. Lawrence Seaway was developed. It was concluded that all-year navigation on the Great Lakes-St. Lawrence Seaway is commercially feasible. Annual freight rates would decrease for laker bulk cargo routes, but increase for overseas routes. Ships which would benefit most from season extension would be the larger, more powerful and more economical ships. Contractor recommends that the overall Great Lakes-St. Lawrence Seaway system model planned for Phase 3 of this study be developed.

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AD-A021 210

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 115 15/5 9/2

BATTELLE COLUMBUS LABS Ohio

Definition of a Systematic Cost- and  
Logistics-Effectiveness (Scale) Procedure.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jul-3 Nov 75.

JAN 76 110P Cork.Thomas R. ;Welp.David

W. ;

CONTRACT: F33601-75-90373

MONITOR: AFLC 75-16

## UNCLASSIFIED REPORT.

DESCRIPTORS: \*Logistics management, \*Computer  
applications, Management information systems,  
Management planning and control, Logistics planning,  
Cost analysis, Life cycle costs, Data management,  
Bibliographies, On line systems

(U)

IDENTIFIERS: \*Cost models, \*Life cycle management,  
\*On line interactive systems

(U)

A Systematic Cost- and Logistics-Effectiveness (SCALE) procedure is defined in this report. The objectives of this brief study were to define the concept of SCALE, review available logistics support computer models, propose an initial family of models, and postulate how the SCALE procedure can be used. The SCALE concept calls for the use of available support cost, support activity simulation, and mission performance computer models in an interactive framework. Five U.S. Air Force models (LSC, MOC-METRIC, ORLA, L-COM, and AEP) and two U.S. Army models (GEMM and LOCAM4) are proposed to form the basis for an initial SCALE family of models.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 083 21/5 14/1

PURDUE UNIV LAFAYETTE IND SCHOOL OF AERONAUTICS  
ASTRONAUTICS AND ENGINEERING SCIENCESPhase II of Feasibility Study of Initial  
Aircraft Propulsion Subsystem Integration  
Cost Model.

(U)

DESCRIPTIVE NOTE: Final rept. 26 Feb-1 Oct 75,  
OCT 75 126P Drake, John W. ;Reda,  
Mostafa R. ;Allen, James J. , Jr;  
REPT. NO. 75-2  
CONTRACT: F33615-74-C-2014  
PROJ: AF-3145  
TASK: 314532  
MONITOR: AFAPL TR-75-88-Pt-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Phase I, Rept. no. 74-1,  
AD-A021 075.  
DESCRIPTORS: \*Turbojet engines, \*Jet engines,  
\*Costs, \*Cost estimates, Regression analysis,  
Computerized simulation, Programming languages,  
Computer programs, Manufacturing, Production,  
Turbine parts, Disks  
IDENTIFIERS: J-69-T-25 engines

(U)

This report describes two methods of estimating the  
production costs of jet engines not yet built:  
(1) By building up the costs of the 'cost  
driving' parts in a traditional Industrial  
Engineering fashion and (2) By using  
regression techniques to estimate either entire  
engine costs (RAND approach) or parts of engines.  
The report concludes that both methods are feasible  
though the former has a greater theoretical accuracy.  
Potential problems of accounting for changes in  
performance and schedule may well give the second  
method the edge in practical application on the bases  
of cost, speed and speed of implementation.  
(Author)

(U)

AD-A021 083

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 075 21/5

PURDUE UNIV LAFAYETTE IND SCHOOL OF AERONAUTICS  
ASTRONAUTICS AND ENGINEERING SCIENCESFeasibility Study of Initial Aircraft  
Propulsion Subsystem Integration Cost  
Model, Phase I.

(U)

DESCRIPTIVE NOTE: Final rept. 9 Sep 74-31 Dec 74.  
OCT 75 64P Drake, John W. ;Reda,  
Mostafa R. ;Allen, James J. , Jr;  
REPT. NO. 75-2  
CONTRACT: F33615-74-C-2014  
PROJ: AF-3145  
TASK: 314532  
MONITOR: AFAPL TR-75-88-Pt-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Jet engines, \*Production engineering,  
\*Cost analysis, Manufacturing, Cost estimates,  
Data bases, Computer programming, FORTRAN,  
Programming languages, Jet aircraft  
IDENTIFIERS: TRAC programming language, APL  
programming language, PL/1 programming language,  
LISP programming language, SNOBOL programming  
language, BASIC programming language

(U)

(U)

This report describes two methods of estimating the  
production costs of jet engines not yet built:  
(1) By building up the costs of the 'cost  
driving' parts in a traditional Industrial  
Engineering fashion and (2) By using  
regression techniques to estimate either entire  
engine costs (RAND approach) or parts of engines.  
The report concludes that both methods are feasible  
though the former has a greater theoretical accuracy.  
Potential problems of accounting for changes in  
performance and schedule may well give the second  
method the edge in practical application on the bases  
of cost, speed and speed of implementation.

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AD-A021 075

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A020 960 13/8 5/3

MARTIN MARIETTA AEROSPACE ORLANDO FLA

PWB Production Assembly Cost  
Guidelines.

(U)

DESCRIPTIVE NOTE: Final quarterly progress rept. 1 Aug-  
31 Dec 75.DEC 75 105P Osborne, Sol C.; Hutchinson,  
Wendell R.; Tartaglia, Frederick E.;  
REPT. NO. GR-13826-1  
CONTRACT: DAAB07-75-C-0029

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Assembly, \*Automation, \*Costs,  
\*Machines, Trade off analyses, Manual operation,  
Digital systems, Magnetic tape, Circuit boards,  
Optical target designators

(U)

IDENTIFIERS: \*Automatic assembly, \*Numerical  
control indicator, Manual assembly, Numerical  
controlled machines

(U)

Work is continuing on the preparation of the PWB Production Assembly Cost Guidelines Manual to provide guidelines to enable users to select and evaluate manual and automatic assembly methods. The section on assembly techniques has been completed. This includes description of assembly procedures, manual working to drawings, to visual aids, and manual to programmed assembly equipment, NCI. Also included are computer/NC tape controlled machines used separately and as part of a machine assembly system. Equipment specifications have been formulated, two of which are included in this Quarterly Report. Also, standard performance time tables have been expanded and put into final form. Assembly cost analysis, though completed and reported in the first quarterly report, has been further simplified as part of the cost forms section. Improved forms have been included because of their close relationship with this section for review and comment. Design for automation analysis, not previously reported, is included in its entirety in its near completed state to permit a comprehensive overview. Design for automation is presented in network format from original circuit design and component selection to basic board artwork, to packaging, and to final assembly.

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AD-A020 960

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A020 669 5/3 1/3

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO

Historical Inflation Program.

(U)

DESCRIPTIVE NOTE: Final rept..  
JAN 76 37P Lilje, Ralph W.;  
REPT. NO. USAAVSCOM-TR-76-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Inflation(Economics), \*Army  
aircraft, \*Cost estimates, Money, Army budgets,  
Cost analysis, Computer program, Computations,  
Methodology, History

(U)

IDENTIFIERS: \*Cost indexes

(U)

This report extends, revises, and summarizes previous efforts to develop the necessary rationale and methodology necessary to construct historical inflation indices relative to Army aircraft. In addition, a computerized Historical Inflation Program is presented and described. The program can be updated monthly, is easily revised for changes in Bureau of Labor Statistics methods, and capable of handling data through the transition year. FY 77. Output is expressed as monthly, quarterly, calendar year inflation indices (in Calendar Year 1967 base) and inflation factors (in any Fiscal Year base). These indices and factors provide a means of accurately adjusting historical cost data to constant year dollars.

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AD-A020 669

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A020 508 13/12 13/13 9/2

ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING CENTER

A Design-Aid and Cost Estimate Model for  
Suppressive Shielding Structures.

(U)

DESCRIPTIVE NOTE: Final rept.,  
DEC 75 124P Per. Richard S. K. ;  
REPT. NO. USAMC-ITC-02-08-76-413

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Shielding, \*Computerized simulation,  
\*Computer aided design, \*Cost estimates,  
Suppression, Structures, Ventilation,  
Coefficients, Bending, Yield, Moments,  
Beams (Structural), Penetration, Fragments,  
Parameters, Plates, Thickness, Materials,  
Structural members, Fabrication, Welding,  
Computer programs, Variables, Explosives,  
Explosions, Safety, User needs  
IDENTIFIERS: \*Suppressive shielding

(U)

(U)

A computer cost model of suppressive shielding structures has been constructed and is presented in the report. This model consists of design-aid and cost estimation programs which, with proper inputs, calculates and outputs specific design and cost variables of suppressive structures. Design variables include the following: venting coefficient, plastic bending and yield moments of beams, penetration of primary fragments, and the total effective thickness of plates. Cost output variables include: material, fabrication, welding, and total costs of panels, frame, door, and foundation of a cubical suppressive structure. A description of the model and its construction details are reviewed in the report. A user's guide which includes step by step instructions in data inputs is also provided. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A020 457 14/4

HUGHES AIRCRAFT CO FULLERTON CA GROUND SYSTEMS GROUP

Reliability Acquisition Cost Study  
(II).

(U)

DESCRIPTIVE NOTE: Final technical rept.,  
NOV 75 69P Schafer, R. E. ; Mead, G.  
T. ; Angus, J. E. ;  
CONTRACT: F30602-74-C-0139  
PROJ: AF-5519  
TASK: 551902  
MONITOR: RADC, GIDEP TR-75-270.E070-0873

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Also available as GIDEP-  
347.40.00.CC-F9-06.  
DESCRIPTORS: \*Reliability (Electronics), \*Cost  
analysis, Mathematical models, Mathematical  
prediction, Regression analysis, Graphics, Curve  
fitting, Data bases  
IDENTIFIERS: Goodness of fit tests

(U)

(U)

This report presents the results of a quantitative investigation into the relationship between reliability expenditures (costs) and reliability in the development phase for ground systems. The reliability program was divided into three phases: design, parts, and evaluation. In particular, three areas were addressed. First, quantitative relationships were developed for predicting reliability costs, by phase, of the reliability program and total cost, based on commonly available independent variables. Second, prediction models were developed for achieved reliability. Next, reliability gain (due to expenditures in each phase) was studied and models were developed for estimating reliability gain: total and by phase. Finally, optimal allocation of reliability resources was investigated. Models were developed and a solution found. The data base consisted of ten systems of relatively recent vintage. The data were subjected to an evaluation for validity and factors affecting reliability and reliability expenditures which could only confuse the results were normalized out of the data.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A020 363 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Workload Analysis of a Military Repair Depot.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 75 205P Clark, Donald A. ;  
REPT. NO. GOR/SM/755-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Depots, \*Military facilities, \*Cost analysis, Labor, Materials, Least squares method, Regression analysis, Cost effectiveness, Work measurement, Theses  
IDENTIFIERS: Indirect costs

(U)  
(U)

Depot sizing is a topic of concern to the Air Force. Determination of the proper size of a repair depot requires a close look at the effects of volume level and economies of scale upon depot costs. In this analysis, direct labor, direct material and overhead costs are examined at time and volume levels change. An output measure is presented as well as an approach for use in workload analyses. Specifically, this study centers on the Aerospace Guidance and Metrology Center (AGMC) located at Newark AFS, Ohio. Relations for estimating direct labor hours, direct labor costs, direct material costs, and overhead costs are derived for 12 end items using least squares regression techniques. The 'measure of merit' problem is examined with respect to finding a workload mix and volume level which is cost effective. An approach to workload analysis is presented which measures the effect on the existing depot workload of adding or deleting an end item.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A020 289 12/2 5/3 12/1 14/1

CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER

Some Results on An 'Income Fluctuation Problem'.

(U)

DESCRIPTIVE NOTE: Research rept..  
DEC 75 31P Schechtman, Jack ;Escudero, Vera L. S. ;  
REPT. NO. GRC-75-23  
CONTRACT: N00014-76-C-0134. NSF-SOC-75-15566

UNCLASSIFIED REPORT

DESCRIPTORS: \*Operations research, \*Income, \*Savings, \*Dynamic programming, \*Purchasing, \*Economics, \*Stochastic processes, \*Cost analysis, Consumers, Commerce, Inventory control, Brazil  
IDENTIFIERS: \*Earnings, \*Income fluctuation problem, Cash flow, Competitive prices, Rio de Janeiro

(U)  
(U)

A consumer at each period, given the income available,  $y$ , has to decide how much to consume and save. If  $y$  consumes  $c > 0$  or  $=$  units he gets  $u(c)$  units of satisfaction or utility, and if  $x = y - c > 0$  or  $=$  is the amount saved then the available income in the next period is  $rx + \omega(k)$  where  $\omega(k)$  is a random variable, and  $r$  is an interest factor that is assumed to be known with certainty. Infinite time horizon problems are considered, and it is shown that if  $0 < \delta < r < 1$ , where  $0 < \delta < 1$  is a discount factor, then the limiting policy is optimal. Questions about the behavior of the stock level are considered, such as boundedness and it is given an example that shows that the stock level might converge almost surely to infinity.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A020 228 5/1 15/5 1/2 12/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Aircraft Airframe Cost Estimation by the Application of Joint Generalized Least Squares.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
NOV 75 119P Handel, Vernon :  
REPT. NO. GOR/SM/75D-7

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military aircraft, \*Airframes, \*Cost estimates, Least Squares method, Mathematical models, Statistical analysis, Mathematical prediction, Air Force procurement, Contracts, Theses

(U)

Joint Generalized Least Squares is a statistical technique which allows for the interaction of a set of regression equations through correlated disturbances. Aircraft airframe cost estimation may be accomplished by disaggregation into elements of cost such as material, labor, tooling, and engineering. Data for various types of aircraft are used to demonstrate the effect of using Joint Generalized Least Squares in developing cost estimating relationships for the elements of airframe cost. A comparison is made to relationships developed using Ordinary Least Squares. Dependent on the number of observations, the number of relationships developed jointly, and the different explanatory variables used, the variance of the relationships may be reduced by using Joint Generalized Least Squares. The Joint Generalized Least Squares technique is extended to permit revision of predictions using the joint distribution of the elements of cost.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A020 210 5/1 15/5 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Microeconomic Theory Applied to Parametric Cost Estimation of Aircraft Airframes.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
DEC 75 86P Dunne, William E. :  
REPT. NO. GOR/SM/75D-3

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military aircraft, \*Airframes, \*Cost estimates, \*Air Force procurement, Mathematical models, Control theory, Nonlinear programming, Least Squares method, Statistical analysis, Production, Time, Contracts, FORTRAN, Theses  
IDENTIFIERS: Microeconomics, Sensitivity analysis, Parameter estimation

(U)

(U)

The theories of microeconomics and optimal control were used to formulate a parametric cost estimation model that provides an insight into the cost flow of an aircraft airframe production program. The model developed uses original total airframe quantity (volume) and initial total production contract time, as well as the traditional values of cumulative quantity, AMPH weight, and speed, as explanatory variables. A form of the model was solved by both a constrained least squares approach and by a nonlinear algorithm with similar results. In the analysis of the model the parameters of volume and time were not found to be statistically significant. The surrogate variables of actual contract volume and time do not explain a significant amount of the total program cost. Several reasons are offered in the thesis. Validation of the model indicates that it is a highly satisfactory estimator of total program cost.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 947 13/8 12/2 15/5 14/1  
5/3

MASSACHUSETTS INST OF TECH CAMBRIDGE OPERATIONS RESEARCH  
CENTER

A Hierarchical Approach to Production  
Planning.

(U)

DESCRIPTIVE NOTE: Technical rept.,

DEC 75 135P Cabbay, Henry ;

REPT. NO. TR-120

CONTRACT: N00014-75-C-0556, N00014-75-C-0661

PROJ: NR-347-027, MIT-OSP-82491

UNCLASSIFIED REPORT

DESCRIPTORS: \*Production, \*Logistics planning,  
\*Operations research, \*Economic models, \*Cost  
analysis, \*Research management, \*Production control,  
Theses, Inventory control, Decision making (U)  
IDENTIFIERS: \*Organization levels, Production  
planning, Product costs, Management science (U)

We begin this discussion with an analysis of the hierarchical framework discussed in Hax and Meal, 1975. After defining the different levels of the hierarchy we provide necessary and detailed models. Several interpretations and consequences of these results are discussed. In addition, it is shown that planning horizons to insure consistency on a detailed level are intimately related to planning on an aggregate level. Although we cannot demonstrate the optimality of the approach of Hax and Meal, lower bounds are easily derived. For the remainder of the report, we do not consider the aggregate product structure of Hax and Meal. Instead, in a linear model, we aggregate all items together. Under a quite general cost structure, we are able to characterize optimal aggregate production which can be optimally disaggregated. The analysis is extended from the single to the multi-echelon case. We formalize some of the preceding notions and present a more general underlying theory. The aggregate characterization is closely related to properties of Leontief systems. In addition, a new characterization of Leontief Substitution Systems is presented. Finally, we extend the original problem to include both regular and overtime considerations and then fixed charges in production. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 932 19/1 5/1

ARMY ARMAVENT COMMAND ROCK ISLAND IL SYSTEMS ANALYSIS  
DIRECTORATE

Risk Analysis of the US Army 155mm Cannon-  
Launched Guided Projectile Program.

(U)

DESCRIPTIVE NOTE: Internal note.

DEC 74 19P Metzler, Martin L Jr:

REPT. NO. AMSAR/SA/A-30

UNCLASSIFIED REPORT

DESCRIPTORS: \*Guided projectiles, \*Artillery  
ammunition, \*Cost analysis, Risk, Scheduling,  
Production, Uncertainty, Networks, Statistical  
analysis (U)

IDENTIFIERS: CLGP(Cannon Launched Guided  
Projectile), \*Cannon launched guided projectile,  
Vert network analyzer, Network analysis, \*155-mm  
guided projectiles (U)

This analysis estimates the schedule and cost risks associated with the Army 155mm Cannon-Launched Guided Projectile (CLGP) development program. The analysis considered the Army CLGP program from 1 January 1975 to initiation of full scale production. Uncertainties were analyzed by simulating the program using a network format and representing cost and schedule as random variables. Statistics were obtained using the VERT network analyzer. The planned program schedule and costs were found to be close to those obtained from the network analysis. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 701 5/1 15/3

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA COST ANALYSIS GROUP

Military Cost Analysis in the FCRCs  
(Federal Contract Research Centers) - 1950-1975.

(U)

DESCRIPTIVE NOTE: Final paper.  
OCT 75 33P McCallough, James D. ;  
REPT. NO. P-1171  
MONITOR: IDA/HQ 75-18002

UNCLASSIFIED REPORT

DESCRIPTORS: \*Department of Defense, \*Cost analysis, \*Contract administration, Cost estimates, Decision making, Organizations, Military planning, Military research

(U)

The 16 organizations which were Federal Contract Research Centers (FCRCs) in 1969 are identified. The current list of 9, including the 4 which have Cost Analysis Groups (CAGs), is described by OSD category. 'CAG' is defined in terms of organizational structure and functions. The history and staffing of CAGs in the 7 FCRCs (of the 16) which have had CAGs is traced from 1950 through 1975. The role and contributions of the CAGs during three time periods--the 1950-60 period, the Hitch-McNamara period of 1961-67, and the 1968-75 period--are discussed. Negative views by some members of Congress and the uniformed military of the FCRCs are analyzed as to possible causes and as to their impact on the FCRCs. The recent impact of this changing environment on CAGs is discussed. The results of an informal survey of the 4 CAGs is presented, including their organizational title, management, staff size, military clients, and planned military research program for FY 76.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 379 20/6 1/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

An Approach to the Estimation of Life Cycle Costs of a Fiber-Optic Application in Military Aircraft.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 75 163P McGrath, John Michael ;  
Michna, Kenneth Ralph ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Fiber optics, \*Optical materials, \*Life cycle costs, Military aircraft, Signal processing, Guides, Optical waveguides, Light emitting diodes, Cost effectiveness, Waveguide couplers, Optical glass, Economic analysis, Delphi techniques, Forecasting, Theses, Attack bombers, Jet bombers, Avionics  
IDENTIFIERS: Optical fibers, ALOFT program, A-7E aircraft, A-7 aircraft

(U)

(U)

As significant technological advances in fiber optics and optical data transmission methods are being made, it is necessary to develop appropriate methods for estimating life cycle costs for alternative coaxial/twisted pair wire and optical fiber avionics. Measures of effectiveness are suggested for each alternative system. An approach, which structures the technological and demand uncertainties of fiber optics, is developed through scenarios as a means of relating cost and effectiveness. It is suggested that Delphi and experience curve techniques be used in conjunction with ordered scenarios as a technological forecasting technique for estimation of life cycle costs of fiber optics. In addition, a review of the historical and technological background of fiber optics and their application to the Naval Electronics Laboratory Center (NELC) A-7 Airborne Light Optical Fiber Technology (ALOFT) Program is included.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 190 5/1 5/3

MASSACHUSETTS UNIV AMHERST GRADUATE SCHOOL

Capital/Labor Substitution and Factor Price Ratios in a Military Service: A Study of Defense Resource Allocation.

(U)

DESCRIPTIVE NOTE: Doctoral thesis.  
AUG 75 103P Clark, Rolf H. :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military budgets. \*Cost estimates. \*Economic analysis. Military procurement. Manpower. Confidence level. Confidence limits. Policies. Trade off analyses. Mathematical models. Salaries. Labor. Cost analysis. Weapon systems. Naval planning. Theses  
IDENTIFIERS: \*Resource allocation. Econometrics

While some analysts claim U.S. Defense systems should become more capital intensive to offset rising labor costs, other feel they are already too sophisticated for the Defense labor force. The research has three goals, which help clarify this division. First, capital/labor ratios as indicators of Defense efficiency are oriented within existing capital accumulation theory. Second, models are developed which are consistent with this theory. Third, the parameters of these models are estimated using U.S. Navy budget and asset data. An attempt is then made at synthesizing the two divergent viewpoints in light of the research models and findings. The findings include the following: (1) Both Defense capital and manpower costs are underestimated by approximately 30%, thus cost bias may be insignificant. The implications of upsetting this balance through new policies such as a salary pay system are discussed. (2) Shifts toward higher capital intensity are evident in new systems, but because of the low and decreasing ratio of new to total defense hardware, changes in overall capital labor ratios have reacted slowly. Finding (2) is presented by comparing substitution elasticity for new versus total systems, and forms the basis for synthesizing the two views on proper capital accumulation. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 185 5/1 15/3

ASSISTANT SECRETARY OF DEFENSE (SYSTEMS ANALYSIS)  
WASHINGTON D C

Proceedings of the Annual Department of Defense Cost Analysis Symposium (32nd)  
Held at Air Force, Virginia on 22-25 September 1974 and Hosted by the Controller of the Air Force.

(U)

SEP 74 68P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 8 Nov 73. AD-774 653.

DESCRIPTORS: \*Cost analysis. \*Department of Defense. \*Meetings. Cost estimates. Management planning and control. Weapon systems. Personnel. Life cycle costs. Contracts

(U)

Contents: Relationships between the Congress and Department of Defense; Congressional Budget and Impoundment Control Act of 1974; Cost Data Problems; Inflation Considerations in weapon systems costs; Personnel Costing; Design to cost (DTC) and life cycle cost (LCC) implications; Operations and support costs; Acquisition cost estimating; Economic analysis and program evaluation. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 624 15/5

ARMY ARMAMENT COMMAND ROCK ISLAND ILL SYSTEMS ANALYSIS  
DIRECTORATE

Deadline Cost Model Study. (U)

DESCRIPTIVE NOTE: Final rept.,

OCT 75 20P Husson, Richard D. ; Moeller,

Gerald L. ;

REPT. NO. AMSAR/SA/N-09

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army equipment, \*Cost analysis,  
\*Logistics planning, Mathematical models,  
Acquisition, Cost estimates, Life cycle costs,  
Maintenance, Army planning, Logistics management,  
Tanks(Combat vehicles) (U)

IDENTIFIERS: Cost models, M-109 Howitzers(155-  
mm), M-167 Vulcan air defense systems, M-163  
Vulcan air defense systems, M-551 vehicles (U)

The study develops a generalized model used to  
quantify the cost incurred by the Army when an  
equipment unit is deadlined. The force-level model  
developed used float factor, acquisition cost,  
service life, repair and maintenance cost, crew cost  
and an impact cost as inputs to develop sample  
deadline costs for the M551, M163, M167, and  
M109. A sensitivity analysis on these sample  
items indicated that the model has considerable  
stability and is not greatly sensitive to input  
estimation errors. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 526 15/5 5/1

RAND CORP SANTA MONICA CALIF

The Impact of Required Contractual Clauses  
on System Acquisition Policies: The Case  
of Value Engineering. (U)

DESCRIPTIVE NOTE: Interim rept.,

SEP 75 55P Baumusch, Geneese G. ;

REPT. NO. R-1722-PR

CONTRACT: F44620-73-C-0011

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Errata sheet inserted.  
DESCRIPTORS: \*Value engineering, \*Design to cost,  
\*Contracts, \*Government procurement, Military  
procurement, Cost analysis (U)  
IDENTIFIERS: Fixed price contracts (U)

This study examines the role that value engineering  
(VE) clauses may be expected to play in design-to-  
cost contracting. Encouraged by Armed Services  
Procurement Regulations incentives, contractor  
VE efforts are supposed to result in proposals for  
contract changes that reduce some aspects of the cost  
associated with developing, producing, or operating a  
particular item. While VE clauses have produced  
some savings, there have also been certain costs  
associated with the use of a complex contractual  
device. This report suggests that cost saving will  
be much more likely to occur with increased use of  
fixed-price contracting for discrete phases of  
development and production, along with more  
competition. Based on an analysis of past  
experience with VE clauses, the central conclusion  
of this study is that while the cost-saving intent of  
value engineering should be an essential ingredie- :  
in design-to-cost strategy, the contractual clauses  
themselves will at best be marginally effective and  
may even hinder implementation of design-to-cost  
programs. (U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 308 5/3 14/1 9/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

An Approach to Point of Sale System  
Acquisition Cost-Benefit Analysis.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
SEP 75 65P Fleming, James Alexander,  
Jr;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Commerce, \*Cost analysis, \*Digital  
computers, \*Cost benefits, Electronic equipment,  
Department of Defense, Automation, Retail,  
Data acquisition, Interactions, Economic models,  
Procurement, Theses

(U)

IDENTIFIERS: POS(Point of Sale Systems),  
Point of Sale Systems, ECR(Electronic Cash  
Registers), Electronic Cash Registers,  
Commissaries, Supermarkets, Retail industry,  
Automated supermarkets, Automated retailing,  
Electronic Point of Sale

(U)

Point of Sale (POS) Systems introduced into the retail and supermarket industries exemplify a change which is occurring in all data collection. Initial Department of Defense utilization of POS Systems is occurring in commissaries and exchanges, military counterparts of the supermarket and retail industries respectively. The purpose of a POS System is to automate point of sale by replacing the electro-mechanical cash register with an electronic cash register (ECR) capable of some degree of interaction with the computer. This thesis summarizes the diffuse literature on POS Systems through discussion of POS System development, components and configurations, and proposes a general cost-benefit model to assist in the POS System acquisition decision.

(Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 761 1/3 15/5 9/2

TECHNOLOGY INC DAYTON OHIO INSTRUMENTS AND CONTROLS  
DIV

RMS Cost Model User's Manual.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 74-Nov 75,  
SEP 75 119P Kirchmer, James E.  
CONTRACT: DAAJ01-74-C-0839  
MONITOR: USAAVSCOM TR-75-2a

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Maintainability, \*Cost  
analysis, \*Computer programs, Army aircraft,  
Maintenance, Spare parts, Maintenance personnel,  
FORTRAN, Inspection, Cost estimates, User needs,  
Computerized simulation

(U)

IDENTIFIERS: H-58 aircr., OH-58 aircraft, RMS  
computer program, Scenarios

(U)

This manual provides a detailed description of the cost input required to operate the RMS Cost model: the descriptions, flow-charts and source listings for the operation and maintenance cost computation subroutines; a complete source listing of the RMS Cost program with annotations for RMS code modifications; and a sample of the cost-information tables.

(U)

AD-A017 761

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 760 1/3 15/5

TECHNOLOGY INC DAYTON OHIO INSTRUMENTS AND CONTROLS  
DIV

Development of RMS Cost Model and  
Demonstration of Alternative OH-58  
Maintenance Scenarios.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 74-Nov 75.

JUL 75 76P Clay, Larry E.; Kirchmer,

James E. ;

REPT. NO. TI-069220-75-06

CONTRACT: DAAJ01-74-C-0839

MONITOR: USAAVSCOM TR-75-27

UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Maintainability, \*Cost  
analysis, Army aircraft, Maintenance, Spare parts,  
Maintenance personnel, Inspection, Cost estimates,  
Computerized simulation

(U)

IDENTIFIERS: H-58 aircraft, OH-58 aircraft, RMS  
computer program, Scenarios

(U)

For several years, the Army has employed the  
Reliability and Maintainability Simulator  
(RMS) computer program to simulate the operation  
and maintenance of helicopter fleets of up to 24  
aircraft. However, since the basic RMS model did  
not include cost information, the economic  
consequences of changes in the maintenance procedures  
could not be projected, and the cost effectiveness of  
contemplated reliability improvements could not be  
evaluated. Consequently, to remedy these  
deficiencies, the RMS model was revised and  
expanded to an RMS COST model by adding a cost  
computation to determine all operating and  
maintenance costs during the simulation period.  
The resultant RMS COST model was demonstrated  
by executing a simulation of an OH-58 helicopter  
company with a baseline mission and maintenance  
system scenario and then with six alternative  
scenarios.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 658 12/1 14/1

STANFORD UNIV CALIF DEPT OF STATISTICS

A Difference Equation Approach to the  
Optimal Control of a Multiclass Queue with  
Discounted Costs.

(U)

DESCRIPTIVE NOTE: Technical rept..

MAY 75 21P Reed, Frank C. ;

REPT. NO. TR-168

CONTRACT: N00014-75-c-0561, NSF-GK-35491

PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: \*Difference equations, \*Queueing  
theory, \*Cost analysis, Control, Costs,  
Optimization, Algorithms, Theorems

(U)

IDENTIFIERS: Discounted costs, Customers

(U)

This report considers the problem of dynamically  
selecting one of a finite number of customer classes  
to serve so that the total expected discounted cost  
over an infinite horizon is minimized. Decisions  
are allowed at the time of service completion, or if  
the server is idle, at the time of customer arrival.  
It is assumed that customers arrive according to  
independent Poisson processes with different  
arrival rates for the various customer classes.  
Service times are independently distributed and  
identically distributed for customers of a given  
class. The cost structure is linear and includes  
class-dependent holding costs, service costs, and  
rewards. Difference equations are used to derive a  
closed form expression for total expected discounted  
cost given the process begins with an arbitrary  
number of customers in each customer class in the  
queue and a non-preemptive priority discipline is  
used.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 563 19/1

ARMY ARMAMENT COMMAND ROCK ISLAND ILL COST ANALYSIS  
DIV

First Destination Transportation Cost for  
Ammunition.

(U)

DESCRIPTIVE NOTE: Technical rept.,

OCT 75 30P Baker, Robert L. :

REF. NO. AASAP-CPE-75-7

UNCLASSIFIED REPORT

DESCRIPTORS: \*Ammunition, \*Transportation, \*Cost  
analysis, Regression analysis, Costs, Predictions,  
Decision making

(U)

This study provides predictive equations for total,  
second-leg, and interim first destination  
transportation (FDT) costs (FY 75 dollars) for  
ammunition items. The methodology employs  
regression analysis involving the independent  
variables of unit weight, unit volume, standard  
price, and their transgenerations.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 540 14/1 11/7 5/9

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Equilibrium Analysis of Effects of a Price  
Change of an Input Factor in the Context of  
Input-Output System.

(U)

DESCRIPTIVE NOTE: Master's thesis.

SEP 75 76P Francisco, Clodualdo R. :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Economic analysis,  
Equilibrium(General), Petroleum products,  
Labor, Energy, Consumers, Models, Market  
research, Theses, Input, Output, Stability  
IDENTIFIERS: Prices

(U)

(U)

This paper is an attempt to model the effects of  
price change of a primary input factor into a segment  
of an economy. The primary input factor referred to  
is petroleum and the segment of the economy, the  
energy sectors. Labor is considered as a other  
primary input factor. Market equilibrium is assumed  
to be stable and the disturbance caused by a price  
change in a primary input factor results in a new  
equilibrium state. Three approaches are made to  
define or specify this new state of equilibrium.  
Input-output economics is the primary basis of all  
three approaches. Having analyzed and defined the  
new equilibrium state gave results that could serve  
as bases in making policy measures relative to the  
nature of the disturbance. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 238 12/2 14/4

CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER

Optimal System Allocations with Penalty Costs.

(U)

DESCRIPTIVE NOTE: Research rept.,

SEP 75 19P

Derman, Cyrus ; Lieberman,

Gerald J. ; Ross, Sheldon M. ;

REPT. NO. ORC-75-15

CONTRACT: N00014-75-C-0781, DAHC04-75-G-0163

PROJ: ARO-P-12549-M

MONITOR: ARO 12549.7-M

UNCLASSIFIED REPORT

DESCRIPTORS: \*Construction, \*Costs, Reliability, Allocations, Mathematical models, Theorems, Optimization

IDENTIFIERS: \*Allocation models

(U)

(U)

There are N stages to sequentially construct I successful components. At each stage, one allocates a certain amount of money for the construction of a component. If y is the amount allocated, then the component constructed will be a success with probability P(y), where P is a continuous nondecreasing function satisfying P(0) = 0. After each component is constructed, one is informed as to whether or not it is successful. If, at the end of the N stages, there are i components short, then a final penalty cost C(i) is incurred. The problem is to, at each stage, determine how much money to allocate so as to minimize the total expected cost (construction cost plus penalty cost) incurred.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 222 19/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Independent Cost Estimate of the GAU-8 Aluminum Cartridge Case.

(U)

DESCRIPTIVE NOTE: Master's thesis (Final).

JUL 75 104P

Hall, Richard L. ;

REPT. NO. GS/1/SW/76S-10

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cartridge cases, \*Cost estimates,

Aluminum alloys, Fabrication, Contracts,

Configurations, Regression analysis, Theses

(U)

IDENTIFIERS: GAU-8 cartridge cases

(U)

An independent cost estimate (ICE) was made on anticipated buys of the GAU-8 30MM aluminum casing. The 'state of the art nature' of aluminum cased ammunition and the absence of historical cost data on similar items resulted in a multitechnique costing approach. An industrial costing approach, based on process data independent of the participating casing manufacturers, was used to estimate large quantity contract buys. Statistical cost estimation, using 20MM steel casing information as a data base, was used to formulate a cost estimating relationship which was then adjusted to reflect the anticipated difference between 20MM steel and 30MM aluminum casings.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 125 1/3 14/1 15/5

RAND CCRP SANTA MONICA CALIF

A Weapon-System Life-Cycle Overview:  
The A-7D Experience.

(U)

OCT 74 47P Nelson, J. R. ; Dey, P.  
 Konoske ; Fiorello, W. R. ; Gebman, J. R. ;  
 Smith, G. K. ;  
 REPT. NO. R-1452-PR  
 CONTRACT: F44E20-73-C-0011

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Attack aircraft, \*Life cycles,  
 Maintenance, Combat readiness, Avionics, Cost  
 analysis, Logistics support, Data acquisition  
 IDENTIFIERS: A-7 aircraft, A-7D aircraft,  
 \*Life cycle costing

(U)

(U)

This study focuses primarily on a comparison of  
 test-phase results with the subsequent operational  
 experience of the A-7D attack aircraft to  
 determine when component reliability and maintenance  
 problems were revealed, what kinds of problems showed  
 up in the various stages of the weapon-system life  
 cycle, and the impact these problems had on  
 operational availability and operating cost. It is  
 found that earlier correction of critical problems  
 should reduce operational and maintenance costs and  
 increase the capability of the system enough to  
 permit a net improvement in the overall capability  
 life-cycle cost of the system. An extended,  
 comprehensive initial Operational Test and  
 Evaluation would allow identification of additional  
 reliability and maintenance problems. A better  
 approach to development of avionics components and  
 related software is needed. Finally, data systems  
 should be improved as necessary and exploited more  
 fully.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 962 9/5 5/1

MARTIN MARIETTA AEROSPACE ORLANDO FLA

PWB Production Assembly Cost Guidelines  
(U).

(U)

DESCRIPTIVE NOTE: Quarterly progress rept. no. 1. 26  
 Mar-31 Jul 75.  
 JUL 75 122P Osborne, Sol C. ; Hutchinson,  
 Wendell R. ;  
 REPT. NO. OR-13826  
 CONTRACT: DAA807-75-C-0029

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Printed circuits, \*Cost analysis,  
 Costs, Assembly, Circuit boards, Manuals,  
 Production, Automation, Production engineering

(U)

A mini-printed wiring board (PWB) production cost  
 manual was prepared identifying and describing  
 representative sections of a manual for the program  
 goal of providing guidelines enabling user to select  
 and evaluate manual and automatic assembly methods.  
 Assembly and cost data was obtained by surveys  
 defining PWBs and assembly capabilities including  
 cost analysis models.

(U)

AD-A016 962

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 788 5/1 13/3

ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN  
ILL

Construction Equipment Cost Guide. (U)

DESCRIPTIVE NOTE: Final rept.

OCT 75 108P Neely, E. ;

REPT. NO. CERL-TR-P-52

UNCLASSIFIED REPORT

DESCRIPTORS: \*Construction equipment, \*Cost  
analysis, Contracts, Government procurement,  
Salaries, Rates, Operations (Personnel),  
Contract administration, Economic analysis,  
Profits

IDENTIFIERS: \*Construction management, \*Ownership  
costs (U)

The purpose of this guide is to assist field  
pricing support personnel (estimators, negotiators,  
price analysts, auditors, etc.) in estimating  
construction equipment hourly ownership and operating  
rates. The guidance provided is in accordance with  
general concepts of the contract cost principles and  
procedures in Armed Services Procurement  
Regulations (ASPR Section 15) and Federal  
Procurement Regulations (FPR Part 1-15).  
The manual is intended for use in negotiated  
construction procurements which require an  
independent government estimate by regulation. The  
original construction contract is awarded as a result  
of an advertised procurement while contract  
modifications to advertised procurements are  
negotiated. The cost estimating concepts of these  
two procurement types are different. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 626 17/7

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIO

AGMC LCC Model for Inertial Navigation  
Systems. (U)

DESCRIPTIVE NOTE: Final rept..

OCT 75 72P Weitzler, Thomas D. ;

REPT. NO. AGMC-75-001

UNCLASSIFIED REPORT

DESCRIPTORS: \*Inertial navigation, \*Life cycle  
costs, Cost analysis, Computer programs,  
Mathematical models, Variables, Constants,  
Parameters, Logistics

IDENTIFIERS: Cost of ownership, \*Life cycle  
costing (U)

The purpose of this report is to document a  
mathematical model currently being used to evaluate  
the potential life cycle costs of inertial navigation  
systems. This model has the capability of isolating  
and analyzing logistics start-up costs. It also  
allows for inertial system subassembly analysis.  
The report includes definitions of all input and  
output parameters, explanation of the equations,  
program listing with data deck description, and a  
sample run. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 478 1/3 5/1 17/7

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION 3410Avionics Proliferation: A Life Cycle Cost  
Perspective.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUL 75 30P Genet, Russell M.; Meitzler,

Thomas D. ;

REPT. NO. AGMC-75-002

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.

DESCRIPTORS: \*Avionics, \*Life cycle costs,  
\*Inertial navigation, Economic analysis, Cost  
effectiveness, Military aircraft

(U)

The paper discusses proliferation and when it can occur. It specifically looks at the economic question of when can it be cost effective to use an existing military inertial navigation system for new aircraft rather than developing and using a new system. The discussion is from a life cycle cost viewpoint with particular attention to the 'start-up' costs. Attached with the paper is a complete reproduction of the input data and computer results used.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 410 1/3 14/1 9/2

GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

Weapon System Costing Methodology for  
Aircraft Airframes and Basic Structures  
Volume II - Estimating Handbook and User's  
Manual, Part II.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 72-Feb 75.

MAY 75 366P Kenyon, R. E. ;

CONTRACT: F33615-72-C-2083

PROJ: AF-1368

TASK: 1368C2

MONITOR: AFFDL

TR-75-44-Vol-2-Part-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume I. AD-A016  
408.

DESCRIPTORS: \*Airframes, \*Cost estimates,  
\*Computer programs, Costs, Methodology, Trade  
off analyses, Cost analysis, Weight, Construction,  
Materials, Ribs, Spars, Coverings, Leading  
edges, Trailing edges, Aerodynamic configurations,  
Computerized simulation, Input, Time sharing,  
Data bases, User needs, Manuals,  
Tables(Data), Graphs

(U)

IDENTIFIERS: Cost estimating relationships, COSTC  
computer program

(U)

This volume provides a detailed description of the function and use of two weapon system costing methodologies for aircraft airframes and basic structures developed for the Air Force Flight Dynamic Laboratory for use in conceptual and preliminary design phases of weapon system development. The methods are a trade study costing method for detailed cost analysis of trades-off between weight, cost, type of construction and type of material and a system costing method for determining the projected cost of a complete airframe within the context of a weapon system development. This volume describes how to make an estimate using either technique and shows the results of a demonstration case. Tradeoff capability has been provided for a range of alternative structure and material combinations. A technique for independent assessing complexity factor has been developed and demonstrated.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 409 1/3 5/1

GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

Weapon System Costing Methodology for  
Aircraft Airframes and Basic Structures.  
Volume II. Estimating Handbook and User's  
Manual. Part I.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 72-Feb 75.

MAY 75 283P Kenyon, R. E. :

CONTRACT: F33615-72-C-2083

PROJ: AF-1369

TASK: 136802

MONITOR: AFFDL TR-75-44-Vol-2-Pt-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, Part 2. AD-A016 410.

DESCRIPTORS: \*Airframes. \*Cost estimates.  
Instruction manuals. Methodology. Trade off  
analyses. Weight. Ribs. Spars. Coverings.  
Leading edges. Trailing edges.  
Skin(Structural). Assembly. Fabrication.  
Systems analysis. Computer programs. Data  
acquisition. Data processing. Data bases.  
Files(Records). Cost analysis. Costs.  
Handbooks

(U)

IDENTIFIERS: \*Cost estimating relationship

(U)

This volume provides a detailed description of the function and use of two weapon system costing methodologies for aircraft airframes and basic structures developed for the Air Force Flight Dynamics Laboratory for use in conceptual and preliminary designs phases of weapon system development. The methods are a trade study costing method for detailed cost analysis of trades-off between weight, cost, type of construction and type of material and a system costing method for determining the projected cost of a complete airframe within the context of a weapon system development. This volume describes how to make an estimate using either technique and shows the results of a demonstration case. Tradeoff capability has been provided for a range of alternative structure and material combinations. A technique for independent assessing complexity factor has been developed and demonstrated.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 408 1/3 5/1

GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

Weapon System Costing Methodology for  
Aircraft Airframes and Basic Structures.  
Volume I. Technical Volume.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 72-Mar 75.

JUN 75 341P Kenyon, R. E. :

CONTRACT: F33615-72-C-2083

PROJ: AF-1369

TASK: 136802

MONITOR: AFFDL TR-75-44-Vol-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, Part 1. AD-A016 409.

DESCRIPTORS: \*Airframes. \*Cost estimates.  
Methodology. Trade off analyses. Assembly.  
Fabrication. Weight. Ribs. Spars. Coverings.  
Structural members. Skin(Structural). Leading  
edges. Trailing edges. Systems analysis.  
Fabrication. Computer programs. Data acquisition.  
Data processing. Data bases. Cost analysis.  
Costs

(U)

IDENTIFIERS: \*Cost estimating relationships

(U)

This volume provides a detailed description of the function and use of two weapon system costing methodologies for aircraft airframes and basic structures developed for the Air Force Flight Dynamics Laboratory for use in conceptual and preliminary designs phases of weapon system development. The methods are a trade study costing method for detailed cost analysis of trades-off between weight, cost, type of construction and type of material and a system costing method for determining the projected cost of a complete airframe within the context of a weapon system development. This volume provides a technical discussion of method development. Tradeoff capability has been provided for a range of alternative structure and material combinations. A technique for independently assessing complexity factors has been developed and demonstrated. Manufacturing costs are separately estimated for the primary elements of substructure: ribs, spars, covers, leading edges, trailing edges, tips, etc.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 344 6/10 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

Cost Prediction Models for Bringing  
Selected Air Force Logistics Command  
Facilities into Compliance with the  
Occupational Safety and Health Administration  
Standards.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
AUG 75 92P Burk, Dannie D.; Moeller,  
George H. ;  
REPT. NO. SLSR-39-75B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Buildings, \*Cost analysis, \*Cost  
estimates, \*Logistics planning, Theses,  
Mathematical models, Air Force,  
Tables (Data), Safety, Industrial hygiene,  
Standards  
IDENTIFIERS: \*Occupational safety and health,  
Recommendations

(U)

(U)

The purpose of the study was to ascertain if  
groupings of Air Force buildings, having the same  
or similar characteristics (as described in real  
property records) could be correlated into a  
mathematical model that would predict the costs  
necessary to bring buildings into compliance with  
standards as set by the Occupational Safety and  
Health Administration. Building characteristics  
from Air Force real property records (such as  
floor space, age, and function) were sorted and  
regressed against estimated costs obtained from an  
actual MAJCOM survey. The model shows that a  
correlation can be made between building  
characteristics and actual survey estimated OSHA  
retrofit costs. Using similar models, budget  
estimates for renovation could be calculated for  
buildings with same or similar characteristics.  
Recommendations for future surveys are included.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 270 15/5 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

Cost/Schedule Control System Criteria:  
An Analysis of Managerial Utility.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
AUG 75 131P Ostdek, Marion A.; Estes,  
Richard T. ;  
REPT. NO. SLSR-15-75B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Logistics planning,  
\*Weapon systems, \*Contracts, Government  
procurement, Management information systems,  
\*Management planning and control, Theses  
IDENTIFIERS: \*Logistics management, Utility  
functions, Planning programming budgets

(U)

(U)

The Cost/Schedule Control System Criteria  
(C/SCSC) is imposed on a contractor's management  
information system during the performance of a  
contract for a major weapon system. Previous  
studies on C/SCSC had identified managerial  
resistance to the criteria. Data, gathered through  
structured interviews with military and contractor  
managers, was analyzed to find if a predetermined set  
of attitudes affected the perceived utility of C/  
SCSC. The selected variables of acceptance of  
quantitative techniques, cost consciousness,  
knowledge of quantitative techniques, and  
hierarchical position were studied as major factors  
influencing the perceived utility of the criteria.  
Relationships between the selected variables were  
not supportive of all five stated hypotheses;  
however, the study provided detailed data on the  
selected variables and on C/SCSC as a management  
tool. After a review of the managers' opinions and  
the available data, a conclusion was reached showing  
that the criteria in its present form is not  
sufficiently productive for the project goals. The  
study also indicates that a significant difference  
exists between military and civilian managers.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 262 15/5 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

An Appraisal of the Short-Term Cost Results of a Selected Number of Air Force Should Cost Studies.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
AUG 75 B5P Schaefer, William E. ;  
Birkhead, Roy F. ;  
REPT. NO. SLSR-2-75B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force procurement. \*Contracts.  
\*Cost analysis, Weapon systems. Costs.  
Logistics, Production engineering. Contract  
administration, Management planning and control.  
Theses  
IDENTIFIERS: \*Should cost analysis. \*Contract  
pricing. \*Contract negotiations

(U)

(U)

Should Cost briefly can be described as a technique of contract pricing which seeks to determine a realistic price objective which reflects reasonably achievable economies and efficiencies of contractor operations. The Air Force has performed a number of Should Cost studies, each with the stated objective of achieving the desired results contemplated by the above definition. Has the Air Force achieved these results. Up to this point, this question has not been easily answerable since the final cost outcomes have not been available as a basis against which originally negotiated cost targets could be compared. Based upon a limited sample of four contracts which were negotiated using the Should Cost technique, the study showed that Should Cost, as used by the Air Force, may be producing results which are not more effective than those experienced from contracts negotiated using conventional cost analysis.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 117 1/3 15/5

COBRO CORP SILVER SPRING MD

RMAC Analysis of CH-47 helicopter.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jul 74-15 Aug 75.  
AUG 75 72P  
CONTRACT: DAAJ01-74-C-1025  
MONITOR: USAAVSCOW TR-75-38

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Reliability, Maintainability, Availability and Cost (RMAC) Analysis.

DESCRIPTORS: \*Helicopters. \*Reliability.  
\*Maintainability. \*Cost effectiveness. Spare parts. Inventory control. Failure (Mechanics). Maintenance. Costs. Removal. Logistics. Army aircraft  
IDENTIFIERS: H-47 aircraft. CH-47 aircraft.  
\*Failure analysis

(U)

(U)

An in-depth analysis was made of the reliability, availability, maintainability and cost of the CH-47 helicopter. The study was based on available Army documentation of the A. B. and Conversions of the helicopter design; the record of component failures and removals as reflected in the Army's RAMMIT Major Item Removal Frequency (MIRF) reports; the system mission and plan for use; the Disassembly and Inspection Reports cover a engineering assessment of removed failed components; and the costs in material, labor and time stemming from removal/replacement of a component. The analysis was carried out using the Army's computerized Analytic Methodology for System Evaluation and Control (AMSEC), together with special techniques and algorithms which were developed as required. The report provides, for the system and for each component of each version, the current RMAC assessment; a cross-comparison between the three versions; an analysis of the impact on RMAC of changes in maintenance plans, or of different costs of mission failure; and an interpretation of DIR information as it bears on RMAC.

(U)

AD-A016 262

UNCLASSIFIED

PAGE 295

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UNCLASSIFIED

ZOM07



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 111 6/8 15/5 14/1

ARMY NATICK DEVELOPMENT CENTER MASS

Uniform Ration Cost System - Summary Report.

(U)

DESCRIPTIVE NOTE: Final technical rept..

JUN 75 188P Richardson, R. P. ; Brandier,

Philip ; Byrne, Robert J. ; Deacon, Ronald ;

Rogozenski, John E. ; Jr.

REPT. NO. NDC-IR-75-69-CR/SA

PROJ: 1-T-762724-AH-99-A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Food dispensing. \*Costs. Feeding. Military rations. Nutrition. Menu. Planning

(U)

The objective of this study is to develop a uniform ration cost system (URCS) that is directly related to known consumer requirements and that includes provisions which make possible a more flexible food service management system. A comprehensive analysis of the current DoD ration cost system has been conducted, resulting in the identification of areas of potential improvement. One of these areas, the setting of an appropriate level of feeding for DoD, has involved a quantitative comparison of food utilization in the military with that of comparable civilian organizations. The recommended URCS contains a Uniform Ration Law that incorporates a cost-date standard (i.e., authorized ration cost as of a selected date). The URCS also provides a more flexible approach for formulating a new food cost index that is consistent with the cost-date standard, nutritional standards, and consumer acceptance considerations. The study describes mathematical programming and computer methods for designing the food cost index.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 104 19/1 14/1

ARMY ARMAMENT COMMAND ROCK ISLAND ILL COST ANALYSIS DIV

Ammunition Cost Research: Medium-Bore Automatic Cannon Ammunition.

(U)

DESCRIPTIVE NOTE: Technical rept..

OCT 75 107P Gannon, Patrick ; George,

Celestino ; Halal, Gerald ; Kellner, Kathleen ;

Riedesel, Paul ;

REPT. NO. AMSAR-CPE-75-6

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Ammunition. \*Ammunition components. \*Cost analysis. Automatic weapons. Cost estimates. Procurement. Production engineering. Statistical analysis

(U)

IDENTIFIERS: \*Cost estimating relationships. \*Cost models

(U)

At the complete round level of detail, statistically valid cost estimating relationships (CER's) for independent parametric cost estimates of ammunition investment costs have been difficult to construct. The long life span of ammunition items reduces the number and range of data points available for a given weapon system class (e.g., tank main armament). To counter this problem, a research project has been undertaken to relate physical round performance to component cost (primers, propellants, projectiles, etc.). The report for medium-bore automatic gun ammunition represents the first of three reports resulting from this project. This report demonstrates how component-level CER's and cost models can be used to independently estimate ammunition investment costs with much greater statistical validity than has been obtained with past approaches.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 040 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

A Model to Predict Final Cost Growth in a  
Weapon System Development Program. (U)

DESCRIPTIVE NOTE: Master's thesis.  
AUG 75 173P Babiarz, Anthony S. ; Giedras,  
Peter W. ;  
REPT. NO. SLSR-49-758

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Cost analysis,  
Procurement, Costs, Risk, Uncertainty, Delphi  
techniques, Mathematical models, Computer programs,  
Theses, Logistics, FORTRAN (U)  
IDENTIFIERS: \*Risk analysis, FORTRAN 4 programming  
language (U)

The increasing cost growth within the DoD  
military weapon system acquisition process has been  
the object of attention for many years. With  
limited resources and shrinking budgets a viable  
technique to monitor and control cost growth is  
needed. The reason for cost growth may be related  
to the elements of uncertainty within a development  
program. A conceptual model, previously developed  
to cope with uncertainties in a weapon system  
acquisition program, was used to determine its  
applicability for use in the present study. The  
model relates the concepts of entropy, information,  
uncertainty and costs in an effort to predict final  
costs based on a measure of uncertainty. The  
measure of uncertainty is entropy, or a lack of order  
in the information available to the program manager.  
The model attempts to express final development  
cost as a ratio of initial cost estimates to program  
entropy. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 038 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

A Simulation of the Reparable Processing  
Procedures Applicable to Reliability  
Improvement Warranties. (U)

DESCRIPTIVE NOTE: Master's thesis.  
AUG 75 216P Nixon, Harvey L. . Jr. ;  
Hitchcock, Charles B. ;  
REPT. NO. SLSR-36-758

UNCLASSIFIED REPORT

DESCRIPTORS: \*Logistics management, \*Cost analysis,  
Costs, Life cycles, Reliability,  
Maintainability, Mathematical models, Computer  
programs, Theses, FORTRAN (U)  
IDENTIFIERS: \*Life cycle costing, \*Reliability  
improvement warranty (U)

The Reliability Improvement Warranty (RIW)  
concept is a procurement methodology which is rapidly  
being implemented in the United States Air  
Force. Effective use of this concept is  
contingent on expeditious movement of RIW  
components between Air Force bases and the  
contractor. Several reparable processing  
procedures have been used with varying degrees of  
success, but there is currently no established  
technique to aid in determining the optimum  
processing procedures. The authors conclude that a  
simulation model has been constructed which can be of  
assistance to the material manager and procurement  
officer in selecting an optimum reparable processing  
procedure. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 638 13/10

NAVAL SHIP ENGINEERING CENTER HYATTSVILLE MD SHIP CONCEPT  
DESIGN DIV

The Impact of Ship Design Margins.

(U)

DESCRIPTIVE NOTE: Final rept. 1 May-1 Sep 75.  
 SEP 75 44P Hockberger, William A. ;  
 REPT. NO. 6112-082-75  
 PROJ: S4627  
 TASK: S4S2701

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval vessels, \*Ship structural  
 components, \*Cost effectiveness, Cost analysis,  
 Computer aided design, Base lines, Load control,  
 Displacement, Cost benefits  
 IDENTIFIERS: \*Design margins, DD07 model

(U)

(U)

The previously defined categories of Design and Construction Margins and Future Growth Margins are discussed briefly, and a third major category, Assurance Margins, is introduced and discussed in more detail. The feasibility of reducing margins to reduce ship size and cost is examined. Following a brief discussion of certain significant aspects of a version of the NAVSEC DD07 destroyer computer synthesis model and of the baseline ship used, the results of some computer studies of margin impacts are presented and interpreted. Changes in margins on space, weight, vertical center of gravity and power (propulsion and electrical) are investigated and their impacts expressed primarily as changes in full load displacement and in acquisition cost. The effects of combinations of margins are illustrated, and attempts are made to explain the mechanisms by which interactions occur.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 624 15/5 5/1

NAVAL TRAINING EQUIPMENT CENTER ORLANDO FLA TRAINING  
ANALYSIS AND EVALUATION GROUPAcquisition Cost Estimating Using  
Simulation.

(U)

DESCRIPTIVE NOTE: Final rept..  
 SEP 75 29P Okraski, Henry C. ;Parrish,  
 William F. , Jr.  
 REPT. NO. TAEG-TM-75-4

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Computerized  
 simulation, Government procurement, Logistics  
 support, Computer programming, Mathematical models,  
 Risk, Uncertainty  
 IDENTIFIERS: ACES model

(U)

(U)

Acquisition cost estimates developed as single point values are, at best, misleading and, at worst, impossible to achieve. Single point estimates do not sufficiently reflect the assumptions, judgment or apprehensions of the estimator. This paper deals with a technique for incorporating uncertainty and risk into the acquisition cost estimating procedure such that the estimates are presented as a range of values, encompassing engineering, manufacturing and logistic support estimates. The cost estimating model, a pragmatic application of simulation and classical cost estimating procedures, has been programmed in BASIC and is generalizable and exportable.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 517 1/3 15/5

ARMY AIR MOBILITY RESEARCH AND DEVELOPMENT LAB FORT EUSTIS  
VA EUSTIS DIRECTORATE

Army Helicopter Cost Drivers, (U)

AUG 75 39P Reddick, Harold K., Jr;  
REPT. NO. USAAMRDL-TM-7  
PROJ: DA-1-F-262209-AH-76

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Life cycles, \*Costs,  
Airframes, Acquisition, Maintenance, Spare  
parts (U)

IDENTIFIERS: \*Life cycle costing (U)

The objective of this investigation is to identify the major high-cost areas, referred to as 'cost drivers', for Army helicopters. The helicopter life-cycle cost is divided into two major areas--acquisition and operating--for breakdown and examination. Acquisition costs, which include R and D and production, generally account for 25 percent of the life-cycle cost. The operating costs, which account for the remaining 75 percent, are examined in terms of maintenance and parts, personnel, and consumables. The helicopter is divided into major subassemblies such as rotor, transmission, and airframe, and each is examined in detail. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 950 14/1 15/5

ARMY ARMAMENT COMMAND ROCK ISLAND ILL COST ANALYSIS  
DIVOverhaul/Rebuild Cost Study ARMCOM  
Items, (U)DESCRIPTIVE NOTE: Technical rept. (U)  
MAR 75 47P  
REPT. NO. AMSAR-CPE-75-3

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Repair,  
\*Maintenance, \*Logistics planning, \*Cost analysis,  
Economic models, Cost effectiveness, Ordnance,  
Artillery, Fire control systems, Small arms,  
Fire control system components (U)IDENTIFIERS: \*Overhaul, \*Rebuild, \*Ordnance  
items (U)

Major item historical overhaul/rebuild data, depot labor rates and overhaul cost estimating relationships (CER's) are tabulated in sufficient detail to allow the estimation of overhaul/rebuild cost for ARMCOM-managed items. Item classes addressed in this study are: (1) Artillery: (2) Fire control; and (3) Small arms. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 772 15/5 14/1

JOINT AFSC/AFLC COMMANDERS' WORKING GROUP ON LIFE CYCLE COST WRIGHT-PATTERSON AFB OHIO

Analysis of Available Life Cycle Cost Models and Actions Required to Increase Future Model Applications.

(U)

DESCRIPTIVE NOTE: Final rept. Mar-Dec 74,  
JUN 75 70P Collins, Dwight E. ;  
MONITOR: ASD TR-75-25

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Life cycles, \*Cost estimates, Mathematical models, Logistics planning, Maintenance, Failure, Logistics support, Accounting

(U)

IDENTIFIERS: Life cycle costs

(U)

The report presents the results of an effort to survey existing life cycle cost (LCC) models and to gain insight into what actions are needed to increase their use. Eight categories of LCC models are defined: accounting models, economic analysis models, cost estimating relationship models, reliability improvement cost models, level of repair analysis models, maintenance manpower planning models, inventory management models, and warranty models. The report includes an analysis of experience to date, deficiencies and potential applications of representative models within each category.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 387 5/3 12/1

KARLSRUHE UNIV (WEST GERMANY)

Isoquants of Continuous Production Correspondences.

(U)

75 9P Bol.G. ; Moeschlin, O. ;

UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics Quarterly, v22 n2 p391-398 Jun 75.  
DESCRIPTORS: \*Set theory, \*Industrial production, \*Costs, \*Topology, \*Economics, \*Mapping (Transformations), Input output processing, Mathematical models, Vector analysis, Efficiency, Reprints

(U)

IDENTIFIERS: Isoquants

(U)

Bol has discussed consequences of the continuity of production correspondences in connection with relations between efficient input and output vectors. Isoquants of continuous production correspondences are used here to extend this work. Simplifications to existing theory are discussed. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 385 15/5 14/2 5/1

MONTREAL UNIV (QUEBEC) DEPARTEMENT D'INFORMATIQUE

Periodic Replacement with Minimal Repair at  
Failure and Adjustment Costs.

(U)

75 13P Tilquin, C. ; Cle-oux, R. ;

## UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics  
Quarterly, v22 n2 p243-254 Jun 75.DESCRIPTORS: \*Replacement theory, \*Cost  
effectiveness, \*Maintenance management, \*Repair,  
Reliability, Optimization, Operations research,  
Failure (Mechanics), Naval research, Peprint  
IDENTIFIERS: \*Adjustment costs

(U)

(U)

An investigation is made of periodic replacement  
policies with minimal repair at failure, thereby,  
minimizing the average expected cost per unit time  
over an infinite time span. The standard cost  
structure is modified by the introduction of a term  
which takes adjustment costs into account.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 382 5/3 5/1

DEPARTMENT OF THE INTERIOR WASHINGTON D C

The Static Theory of Transfer Pricing.

(U)

75 16P Enzer, Hermann ;

## UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics  
Quarterly, v22 n2 p375-389 Jun 75.DESCRIPTORS: \*Economics, \*Management planning and  
control, \*Cost analysis, \*Cost effectiveness,  
\*Commerce, Industrial production, Lagrangian  
functions, Reprints  
IDENTIFIERS: Profits, \*Decentralization,  
\*Transfer pricing

(U)

(U)

An analysis of the literature of transfer pricing  
is presented. It is shown that, under assumptions  
that the firm and its divisions have full  
deterministic knowledge of their costs and demands,  
some form of average cost is the appropriate transfer  
price. What happens when a firm adopts an objective  
other than profit maximization is further examined.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 349 14/1 16/4 9/2 15/7

GENERAL RESEARCH CORP SANTA BARBARA CALIF

Cost Estimating Study, an Abstract of  
Activities Performed in 1974.

(U)

DESCRIPTIVE NOTE: Rept. for 1 Jan-31 Dec 74,  
FEB 75 6P Flueckiger, W. D. ;

REPT. NO. CR-1-519

CONTRACT: N00014-72-C-0311

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Cost analysis,  
\*Guided missiles, \*Naval tactical data systems,  
\*Naval operations, Resources, Parametric analysis,  
Computer programs, Computers

(U)

IDENTIFIERS: \*Navy tactical missiles

(U)

This report summarizes the cost estimating/cost  
analysis activities performed for the Office of the  
Chief of Naval Operations, Systems Analysis  
Division, Resource Analysis Group. Cost  
estimating and analysis was provided for Navy  
tactical missiles and tactical data processing  
hardware and software.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 319 15/5 5/1

MANTECH OF NEW JERSEY CORP ROCKVILLE MD

Executive Summary of the Navy Weapon System  
Life-Cycle Cost Model (WSCOV).

(U)

DESCRIPTIVE NOTE: Executive summary.  
JUL 75 9P Wood, Stephen S. ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Life cycles, \*Cost  
analysis, Cost estimates, Management planning and  
control, Logistics planning, Navy  
IDENTIFIERS: Project management

(U)

(U)

The Navy Weapon System Life-Cycle Cost  
Model is a generalized user-oriented cost model  
that calculates and displays system costs in  
accordance with a Work Breakdown Structure  
(WBS) or similar hierarchical cost level scheme. It  
is applicable to any development program in which  
costs must be monitored and recalculated for frequent  
changes in cost-related parameters. The model is  
intended for use by a cost analyst.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 209 5/2 5/1

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN DIEGO  
CALIF

An Approach for Measuring Benefit and Cost  
in Management and Information Systems.

(U)

DESCRIPTIVE NOTE: Final rept..

OCT 74 58P DiGialleonardo, Frank R. ;

Barefoot, David B. ;

REPT. NO. NPRDC-TR-75-21

UNCLASSIFIED REPORT

DESCRIPTORS: \*Management information systems. \*Cost  
analysis. Manpower. Planning. Decision making.  
Mathematical models. Systems analysis. Information  
theory

(U)

A technique is developed for assessing benefit and  
to a more limited degree, cost in order to permit  
meaningful cost-benefit analysis of management and  
information systems. The technique is most  
immediately a response to requirements in analyzing a  
large and complex manpower planning and programming  
system. It is more generally a response to an  
apparent gap in existing cost benefit methodology in  
regard to obtaining useful performance measures in  
managerial information systems. A model with three  
prime determinants of benefits is postulated:  
Potential contribution. Received value. and  
Utilized value. Other candidate factors are also  
considered, notably feedback. A methodology for  
costing inputs and outputs is also developed as an  
important complement to the benefit measures.  
Analysis results are presented for preliminary data  
gathered via a questionnaire. Alternative models  
for considering the measures are discussed. A plan  
for detailed analysis of the model using extensive  
data now being collected, in addition to proposed  
laboratory experimentation, is presented.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 108 17/7 14/1

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIO

Proceedings of the Life Cycle Cost Task  
Group of the Joint Services Data Exchange  
for Inertial Systems Quarterly Meeting  
(5th) Held at Redondo Beach, California  
on 19 November 1974.

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 74 80P Stauffer, Russell B. ;

REPT. NO. AGMC-74-046

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 19 Aug 74.  
AD-787 220.

DESCRIPTORS: \*Inertial systems. \*Life cycles.  
\*Cost analysis. \*Meetings. Inertial navigation.  
Costs. Budgets. Logistics. Spare parts.  
Management planning and control. Acquisition.  
Economics

(U)

IDENTIFIERS: \*Design to cost

(U)

These proceedings describe the activities of the  
fifth quarterly meeting of the Life Cycle Cost  
Task Group of the Joint Services Data  
Exchange for Inertial Systems held 19-21  
November 1974. The proceedings contain the text  
and slides (where available) of the invited  
papers and the results of sub group meetings on  
charter revisions, creation of LCC Task Group  
descriptive paper and preparation of input/output  
specifications for the LCC model under  
development.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 926 15/5 5/1

AIR FORCE AVIONICS LAB WRIGHT-PATTERSON AFB OHIO

Cost-Estimating Relationships Using Linear,  
Log-linear and Non-linear Regression.

(U)

DESCRIPTIVE NOTE: Final rept. Aug 74-Jan 75,  
APR 75 19P Bilikam, J. E. ;  
REPT. NO. AFAL-TR-75-43

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Feb 74, AD-  
781 132.

DESCRIPTORS: \*Cost estimates. \*Regression analysis.  
Radar, Inertial navigation, Computers.

(U)

MAINTENANCE, AVIONICS  
IDENTIFIERS: \*Cost estimating relationships, Log  
linear density functions

(U)

The report addresses the use of weighted regression  
for linear cost estimating relationships and non-  
linear regression for log-linear cost estimating  
relationships with the trends in residual  
distributions.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 802 15/5 5/1

DIRECTORATE OF AEROSPACE STUDIES KIRTLAND AFB N MEX

Handbook for the Implementation of the Design  
to Cost Concept.

(U)

DESCRIPTIVE NOTE: Final rept..  
FEB 75 104P Anderson, Richard H. ; Dixon,  
Thomas E. ;  
REPT. NO. SA-TR-75-2

UNCLASSIFIED REPORT

DESCRIPTORS: \*Government procurement. \*Cost  
analysis. \*Management planning and control. Systems  
analysis. Mathematical models. Reliability. Cost  
effectiveness. Probability

(U)

IDENTIFIERS: \*Design to cost. \*Project  
management

(U)

This report documents various models and  
methodologies in the form of a practical handbook of  
management tools. These management tools provide a  
system Program Manager with the means to do the  
following on a day-by-day basis: (1) Evaluate  
current system progress; (2) Identify problem  
areas associated with various subsystems where  
corrective actions or additional subsystem options  
are required; (3) Identify subsystems for which  
a reduction in performance has a small effect on  
total system performance and investigate if these  
subsystems can be replaced by lower cost subsystems  
with the cost savings invested more effectively in  
the improvement of other more critical subsystems;  
(4) Select the combination of subsystem options  
yielding the maximum total system performance  
achievable at the Design to Cost goal, i.e.,  
optimal allocation of resources; and (5)  
Evaluate the effect of any proposed change in  
system design and its impact on Design to Cost  
goals.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 711 12/1 14/1 12/2

ARIZONA HEALTH PLANNING AUTHORITY PHOENIX

A Mean Cost Approximation for  
Transportation Problems with Stochastic  
Demand.

(U)

74 8P Wilson, Dan ;

## UNCLASSIFIED REPORT

Availability: Pub. in Naval Logistics  
Quarterly, v22 n1 p181-187 Mar 75.  
DESCRIPTORS: \*Stochastic processes. \*Operations  
research. \*Cost analysis. Transportation.  
Approximation (Mathematics). Models.  
Algorithms. Costs. Boundaries. Reprints

(U)

Among the many tools of the operations researcher is the transportation algorithm which has been used to solve a variety of problems ranging from shipping plans to plant location. An important variation of the basic transportation problem is the transportation problem with stochastic demand or stochastic supply. This paper presents a simple approximation technique which may be used as a starting solution for algorithms that determine exact solutions. The paper indicates that the approximation technique offered here is superior to a starting solution obtained by substituting expected demand for the random variables. (Author)

(U)

AD-A013 711

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 579 17/7 1/5

MITRE CORP MCLEAN VA

Airport Surface Traffic Control Systems  
Development Analysis - Expanded.

(U)

DESCRIPTIVE NOTE: Final rept. Jan 73-Feb 74.  
MAR 75 115P Bales, R. A. ; Koetsch, J.  
F. ;

CONTRACT: DOT/TSC-RA-73-11

MONITOR: FAA-RD.TSC 75-51.FAA-74-26

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Jan 74, AD-773 699.

DESCRIPTORS: \*Airport radar systems. \*Cost analysis.  
\*Air traffic control terminal areas. Airports.  
Benefits. Deployment. Surveillance. Search  
radar. Plan position indicators. Display systems.  
Traffic. Runways. Taxiways. Visibility.  
Weather. Aviation safety. Airport control  
towers

(U)

IDENTIFIERS: \*ASTC (Airport Surface Traffic  
Control). \*Airport surface traffic control.  
Benefit cost analysis. DOT/5L. DOT/4CZ/  
CA

(U)

A previous MITRE Technical Report, Airport Surface Traffic Control Systems Deployment Analysis, FAA-RD-74-6, presented an analysis of ASTC (Airport Surface Traffic Control) system requirements and developed estimates of the deployment potential of proposed ASTC system alternatives for 19 air carrier airports. The primary requirement was determined to be improved surveillance which resulted in an estimated deployment of one of two surveillance systems at 16 airports by 1980. This report presents an expansion of that deployment analysis to include a total of 39 air carrier airports. The methods and assumptions for the deployment analysis of the 20 airports presented in this report are essentially the same as in the initial report. The overall result of the analysis is that by the initial deployment date (1976-1980) of the two alternative surveillance systems, the total potential market will be for 20-25 systems.

(U)

AD-A013 579

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 521 19/1 19/6

ARMY ARMAMENT COMMAND ROCK ISLAND ILL SYSTEMS ANALYSIS  
OFFICE

Cost-Effectiveness Comparison of the Retubed  
M114 and XM198 Cannon Systems. (U)

DESCRIPTIVE NOTE: Final note.

MAR 75 17P DeArmon, Ira A. ; Northey,

Frederick U. ;

REPT. NO. SAO/N-19

UNCLASSIFIED REPORT

DESCRIPTORS: \*Howitzers. \*Artillery ammunition.  
\*Cost effectiveness. Gun barrels. Firing  
tests(Ordnance). Targets (U)

IDENTIFIERS: M-198 howitzers(155-MM). XM-198  
howitzers(155-MM). M-114 howitzers(8-in.).  
Gun modification (U)

A comparison was made of the ammo cost on the basis  
of A Division Force Equivalent (DFE) per  
combat day in Europe and Korea using the retubed  
M114 and using the XM198. Results were  
determined for three conditions, i.e., (1) using  
the most cost-effective projectiles (all  
calibers), (2) using 8-inch projectiles only  
for targets beyond the range of 155mm, and (3)  
when the 8-inch ICM projectile was  
unavailable. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 514 19/6 19/1 14/1

ROCK ISLAND ARSENAL ILL GENERAL THOMAS J RODMAN LAB

Life Cycle Time and Cost Estimates for  
Squad Automatic Weapon System Candidates. (U)

JAN 75 392P Schwegler, R. F. ;

REPT. NO. RIA-R-TR-75-030

UNCLASSIFIED REPORT

DESCRIPTORS: \*Automatic weapons. \*Squad level  
organizations. \*Cost estimates. Life cycles. Time.  
Scheduling. Small arms. Small arms ammunition.  
Trade off analyses. Prototypes. Fabrication.  
Industrial production. Data bases. Rifles.  
Machine guns. Cartridges. Management planning and  
control. Costs (U)

IDENTIFIERS: \*SAWS(Squad automatic weapon system).  
\*Squad automatic weapon system program. Fabrique  
nationale weapon. 5.56-mm cartridges. 6.00-mm  
cartridges. 7.62-mm cartridges. XM-235 weapons. M-  
235 weapons. XM-732 weapons. M-16 rifles(5.56-  
mm). M-732 weapons. M-16A1 guns(5.56-mm).  
M-14 guns(cal .30). M-14A1 guns(cal  
.30). \*Life cycle costs (U)

This report documents for future reference the  
steps taken to prepare Life Cycle Cost and  
Schedule Estimates for the Squad Automatic  
Weapon System (SAWS) Program. All costs are  
given in FY75 dollars. The body of the report  
addresses a program which remains in Advanced  
Development from FY75 until FY77. The period  
encompassing FY77, FY78 and FY79 is the time  
frame for Engineering Development. This is  
followed by a 12 month Limited Production period  
and a subsequent Full Scale Production period.  
The Appendix gives the detailed Cost and  
Schedule Estimates from which the final Trade  
Off Determinations and Program Costs were  
derived. Five weapon mechanism concepts and six  
types of ammunition are approached in a variety of  
combinations. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 477 15/5 13/10

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Selection of a Naval Base System for Patrol  
Vessels: A Cost-Effectiveness  
Analysis.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JUN 75 81P Adityavarna, Georgius Wirawan :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval shore facilities, \*Cost  
effectiveness, \*Patrol craft, \*Maintenance  
management, \*Naval planning, Indonesia, Naval  
vessels, Naval logistics, Repair, Logistics  
planning, Cost estimates, Theses  
IDENTIFIERS: \*Logistics management

(U)

(U)

Indonesian naval patrol vessels which are operated  
in the waters of the Riau Islands (East of  
Sumatra) must return to their home base at  
Surabaya for their periodical maintenance and  
repair. Establishment of a naval base in that area  
that can provide maintenance and repairs to the  
patrol vessels could save the time and cost lost in  
steaming the distance to Surabaya and return.  
Three prospective sites were considered for  
potential development as a naval base. From these  
three sites six alternative base systems were  
developed. A cost-effectiveness methodology was  
used for selecting the preferred alternative. The  
result of the analysis indicated that upgrading the  
existing facilities at Tanjungpinang to a naval  
station without maintenance and repair facilities and  
performing the maintenance and repair of the naval  
patrol vessels at Surabaya is the most cost-  
effective base system among the alternatives  
considered.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 369 14/1 17/2.1

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

Life Cycle Cost Model.

(U)

DESCRIPTIVE NOTE: Final rept..  
JUL 75 39P Otto, Thomas W. . Jr:  
REPT. NO. ECOM-4338  
PROJ: DA-1-S-763707-D-437  
TASK: 1-S-763707-D-43707

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Cost analysis,  
\*Radic equipment, Life cycles, Learning curves,  
Communication and radio systems, Army procurement,  
Management planning and control, Mathematical  
models, Computer programs, Tactical communications,  
Costs  
IDENTIFIERS: \*Life cycle costs

(U)

(U)

Recent experience in performing life cycle  
Cost Analyses on single channel tactical radio  
equipment has shown the need for a complete and  
computerized LCC model. This report discusses  
such a model which has been developed by the author.  
The cost categories and each of their elements are  
presented initially in broad terms; then the  
mathematical equations which compute each element are  
presented. Additionally, a comprehensive discussion  
of the Learning Curve and various methods of  
applying it are presented. (Author)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 362 5/1 14/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

An Overview of DoD Policy for and  
Administration of Independent Research and  
Development.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 75 164P Bethel, Howard Emery ;  
REPT. NO. DSMS-PMC-75-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Research management, \*Industrial  
research, \*Costs, Allocations, Department of  
Defense, Policies, Technology, Law, Military  
procurement, Cost analysis, Patents  
IDENTIFIERS: \*Independent research and development,  
Contractors

(U)

(U)

Independent research and development (IR/D) is  
contractor initiated and conducted research and  
development effort not sponsored by a contract or  
grant. The DOD recognizes IR/D as a normal  
cost of business and accepts its reasonable and  
allocable share of these costs. The allowability of  
IR/D costs and DOD policy and administration of  
this area have been and are controversial. This  
report presents an overview of DOD IR/D policy  
and administration. The evolution, current status,  
and major areas of existing controversy are  
highlighted. Current DOD policy appears to be a  
reasonable balance of the needs for good stewardship  
of the taxpayer's funds and the needs for a strong  
technological base. Major shifts in policy, whether  
to the more liberal extremes advocated by the  
industry or the more restrictive extremes advocated  
by Senator Proxmire and Admiral Rickover,  
would probably be detrimental to the best interests  
of the Department of Defense.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 258 1/3

RAND CORP SANTA MONICA CALIF

Parametric Equations for Estimating Aircraft  
Airframe Costs.

(U)

MAY 75 120P Large, Joseph P. ;Campbell,  
Harry G. ;Cates, David ;  
REPT. NO. R-1693-PA/E  
CONTRACT: DAF-C15-71-C-0220

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Feb 72. AD-  
A012 091.

DESCRIPTORS: \*Airframes, \*Cost estimates,  
Scientific research, Labor, Manufacturing,  
Engineering, Tools, Flight testing, Regression  
analysis, Accounting, Computer applications

(U)

A set of generalized equations for estimating  
development and production costs of aircraft  
airframes on the basis of such characteristics as  
aircraft weight and speed is presented. (Extensive  
investigation has shown that these characteristics  
explain cost variations better than any other  
objective parameters.) Equations derived by  
multiple-regression techniques are presented for each  
of the major cost elements, for total program cost,  
and for prototype development costs. The report  
explains the derivation of each equation and  
describes the treatment of the data, the fitting of  
regression equations, and selection of preferred  
equations. A detailed numerical example is included  
which applies to preferred equations and compares the  
results to those obtained using several sets of  
alternative equations. 15

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 221 14/1 9/1 20/6

NAVAL ELECTRONICS LAB CENTER SAN DIEGO CALIF

A-7 ALOFT Economic Analysis Development  
Concept.

(U)

DESCRIPTIVE NOTE: Technical document.  
JUL 75 7JP Ellis, J. R.; Greenwell, R.

A. 1  
REPT. NO. NELC/TD-435  
PROJ: WF41-X1, NELC-F228  
TASK: WF41-X1-001

UNCLASSIFIED REPORT

DESCRIPTORS: \*Fiber optics transmission lines.  
\*Avionics. \*Cost analysis. \*Cost effectiveness.  
Fiber optics, Economics, Life cycles, Light  
emitting diodes, Photodetectors, Attack bombers,  
Jet bombers, Digital systems, Signals,  
Multiplexing, Data transmission systems,  
Transmission lines, Electric cables,  
Interfaces

(U)

IDENTIFIERS: A-7 aircraft, ALOFT project,  
ALOFT(Avionics light optical fiber technology),  
Avionics light optical fiber technology, Economic  
analysis

(U)

The economic analysis plan will establish the costs  
and benefits of applying future fiber optic  
technology to avionics cabling. Component  
descriptions, interface requirements, and the signal  
list for the A-7 (ALOFT) system are included to  
provide the necessary background to perform the  
economic analysis. (Author)

(U)

IAC SUBJECT TERMS: M--(U)COMPRESSION TEST, STRESS STRAIN  
DATA, ALUMINUM ALLOYS, 2024-T3510, 6061-T6, ARMOR, MODULUS  
OF ELASTICITY, POISSONS RATIO, PLASTICITY, TENSILE YIELD  
STRENGTH, 22 C, HARDNESS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 171 5/9 15/5

AIR FORCE HUMAN RESOURCES LAB BROOKS AFB TEX

Air Force Human Resources Laboratory  
Military Personnel Costing Conference.

(U)

DESCRIPTIVE NOTE: Final rept. Jan 73-May 74.  
DEC 74 49P Baran, M. Anthony

REPT. NO. AFHRL-TR-74-106  
PROJ: AF-1124  
TASK: 112403

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Proceedings of Conference Held 2-3  
May 1973 at the AFHRL Advanced System Div.,  
Wright-Patterson AFB, Ohio.

DESCRIPTORS: \*Costs. \*Military personnel.  
\*Meetings, Life cycles, Systems engineering,  
Logistics support, Budget

(U)

The conference was the initial step in an R and  
D project to develop and demonstrate a family of  
techniques to generate standard personnel cost data  
for use in: (1) weapon system design  
engineering; (2) weapon system life cycle support  
operations; and (3) personnel/manpower budgeting.  
It was organized to provide technical guidance in  
directing the efforts of this project.  
Representatives from various organizations within  
Air Force Headquarters, Tactical Air  
Command, Air Force Systems Command, Air  
Training Command, Air Force Logistics  
Command, and the United States Naval  
Research Laboratory comprised the membership.  
The objectives were: (1) identify and  
summarize the various concepts and practices of  
personnel costing and how they relate to system  
engineering design, system support, and various  
command level personnel, manpower, and budgetary  
activities; (2) identify the 'users' of personnel  
cost data, their present requirements and uses for  
it, and their desires for new types or formats of  
such data; (3) ascertain what has been  
accomplished by other agencies that could be adapted  
to satisfy in part/whole the requirements identified  
in objective 2 and identify work currently in  
progress which might be applicable.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A012 809 5/3 21/4 13/10

NATHAN (ROBERT R) ASSOCIATES INC WASHINGTON D C

Petroleum Transportation Systems Study.  
Chapter V. Refinery Operating Costs.

(U)

DESCRIPTIVE NOTE: Final rept.

APP 75 31P

CONTRACT: DACW31-73-C-0051

MONITOR: INR Paper-75-P4

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supplement to DOT Report:  
'Economic Aspects of Refinery and Deepwater Port  
Location in the United States' (PB-236 701 through  
PB-236 705). See also Chapter 4. AD-A012 808.DESCRIPTORS: \*Petroleum industry. \*Marine terminals.  
\*Refineries. \*Cost analysis. Systems analysis.  
Economic models. Costs. Petroleum products.  
Production engineering. Profits

(U)

IDENTIFIERS: Crude oil. Cost models. Deepwater  
terminals. Pipeline transportation. Industry  
productivity

(U)

This part of the study presents the basic analysis  
of refinery operating costs in the various petroleum  
refinery districts to be supplied with imported crude  
petroleum.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A012 807 5/3 21/4 13/10

NATHAN (ROBERT R) ASSOCIATES INC WASHINGTON D C

Petroleum Transportation Systems Study.  
Chapter III. Port Costs.

(U)

DESCRIPTIVE NOTE: Final rept.

JPR 75 173P

CONTRACT: DACW31-73-C-0051

MONITOR: INR Paper-75-P2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supplement to DOT Report:  
'Economic Aspects of Refinery and Deepwater Port  
Location in the United States' (PB-236 701 through  
PB-236 705). See also Chapter 2. AD-A012 806 and  
Chapter 4. AD-A012 808.DESCRIPTORS: \*Petroleum industry. \*Marine terminals.  
\*Refineries. \*Cost analysis. Systems analysis.  
Costs. Construction. Marine transportation.  
Pipelines. Refineries

(U)

IDENTIFIERS: Crude oil. Transshipment costs.  
Cost models. Deepwater terminals

(U)

This part of the study presents the basic analysis  
of deepwater port construction and operating costs  
for crude oil.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A012 795 14/1 15/5 5/3

ARMY PROCUREMENT RESEARCH OFFICE FORT LEE VA

The Application and Utility of Independent Government Cost Estimates.

(U)

DESCRIPTIVE NOTE: Final rept.,

OCT 74 53P Correia, Charles A. ;  
REPT. NO. APRO-103-4

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Contracts, \*Army procurement, Statistical analysis, Assessment, Cost analysis, Policies, Department of Defense

(U)

IDENTIFIERS: IGCE's (Independent government cost estimates), \*Independent government cost estimates, Contractor estimates, Government price objectives, Negotiated price, Contracting officer

(U)

This report concerns the policy and usage of Independent Government Cost Estimates (IGCE's) throughout the US Army Materiel Command's (AMC) major subordinate commands. A statistical analysis of a representative sample of production contracts is made comparing IGCE's, contractors' estimates, Government's price objectives and negotiated prices. The study objectives are to determine the influence of IGCE's on the price analysis/cost analysis estimates which are used to determine the Government's initial price objective; assess the relationship between the IGCE's and the contractors' proposed price; and determine the most effective method of using the IGCE in the contract cost estimating process. Based upon the analysis and interview with preparers and users of IGCE's, recommendations are made concerning policy and use of IGCE's within AMC. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A012 635 15/5 13/8

NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER BETHESDA MD

The Possible Application of Numerically Controlled Manufacturing to Navy Supply System Procurement.

(U)

DESCRIPTIVE NOTE: Final rept.,

DEC 74 46P Redding, John L. ; Smith, Bradford M. ;  
REPT. NO. NSRDC-4600  
PROJ: F53-531  
TASK: F53-531-005

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Machine tools, \*Production engineering, \*Cost analysis, \*Naval procurement, Standardization, Inventory control, Naval equipment, Naval vessels

(U)

IDENTIFIERS: Numerical control

(U)

The study assesses the potential benefits which could be derived by the Navy Ships Parts Control Center (SPCC) by including numerically controlled (NC) machine tool parts programs and documentation with a standard technical data package in the procurement of hard-to-get parts. Parts analyzed were those for which a purchase request had been outstanding for more than 120 days and for which no purchase action had yet taken place. The benefits investigated in this study were the possibilities of reduction in cost and procurement time which could be directly gained by SPCC by using NC technology. The study shows that the procurement problems for the hard-to-get parts and the parts program transfer problems are such that currently it would not be profitable for SPCC to include NC parts programs and documentation with standard technical data packages; thus no direct reduction in procurement time or cost could accrue to SPCC at this time from the use of numerical control technology.

(U)

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AD-A012 635

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 643 15/5 1/3

RAND CORP SANTA MONICA CALIF

Estimating Life-Cycle Costs: A Case  
Study of the A-7D.

(U)

FEB 75 71P Fiorello, Marco ;

REPT. NO. R-1518-PR  
CONTRACT: F44620-73-C-0011

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force procurement, \*Attack  
aircraft, \*Cost analysis, \*Logistics planning,  
Acquisition, Forecasting, Cost estimates, Weapon  
systems

(U)

IDENTIFIERS: \*Life cycle costing, A-7 aircraft,  
A-7D aircraft, Logistics management, Force  
structure planning

(U)

The report is concerned with the determination of costs incurred in acquiring and owning a weapon system and the data problems associated therewith. Incurred or historical costs can be used to anticipate future costs of operations and support, to compare forecast with incurred costs for evaluating forecasting techniques, or to estimate a weapon system's total life cycle costs (LCC) for use, along with the associated weapon system capability, in force structure planning. The principal objective of the study is to demonstrate the derivation of the life-cycle cost.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 401 5/1 15/5 9/2

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO SYSTEMS ANALYSIS  
OFFICEUsers Manual: Forecast of Schedule/Cost  
Status Utilizing Cost Performance Reports  
of the Cost/Schedule Control Systems  
Criteria: A Bayesian Approach (FORTRAN  
IV).

(U)

DESCRIPTIVE NOTE: Technical rept.,

MAR 75 32P Bankley, Mark E. ;

REPT. NO. AMSAV-D-75-2

MONITOR: USAAVSCOM TR-74-60

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Jan 73. AD-  
754 576.DESCRIPTORS: \*Cost estimates, \*Contracts,  
\*Department of Defense, Forecasting, Decision  
making, Scheduling, Bayes theorem, Computer  
programs, FORTRAN, Statistical analysis, Logistics  
planning

(U)

IDENTIFIERS: Bayesian estimation, FORTRAN 4  
programming language

(U)

This report presents a computer program of the Bayesian approach to forecasting cost and schedule performance by work breakdown structure as reported by Department of Defense (DOD) contractors. The technique uses the data from a DOD contractor Cost Performance Report as furnished to the Government under the Cost/Schedule Control Systems Criteria.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 376 9/2 17/2

CALIFORNIA UNIV LOS ANGELES GRADUATE SCHOOL OF  
MANAGEMENTCost Tradeoffs Between Local and Remote  
Computing.

(U)

DESCRIPTIVE NOTE: Technical rept.,

JUN 75 11P Lientz, Bennet P. ;

REPT. NO. TR-4

CONTRACT: N00014-67-A-0269-0027, N00014-69-A-0266

PROJ: NR-049-345

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Pub. in Computer Communication  
Networks, p469-480 1975.

DESCRIPTORS: \*Communications networks, Centralized,

Cost effectiveness, Message processing

IDENTIFIERS: \*Computer networks, Centralization,

Benefit cost analysis, Network analysis theory (U)

A major problem in communication networks analysis is to determine the degree of centralization of computer power that is desirable from both an operational and cost/benefit point of view. An example of this problem occurs in a manufacturing complex wherein decisions must be made on the distribution of data, process power, and redundancy. Because of the many parameters involving hardware, system software, and communications, a purely analytical approach is often impractical. The method here is to employ an analytical simulation model to obtain measures of cost, throughput, and response time. After the model itself is examined, focus is placed on several experiments which reveal the superiority of semi-centralized configurations. Application to logistic and manufacturing systems are explored along with the development of a network link construction method. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 375 9/2

CALIFORNIA UNIV LOS ANGELES GRADUATE SCHOOL OF  
MANAGEMENTComputer Network Usage -- Cost-Benefit  
Analysis.

(U)

DESCRIPTIVE NOTE: Technical rept.,

JUN 75 19P Lientz, Bennet P. ;

REPT. NO. TR-5

CONTRACT: N00014-67-A-0269-0027, N00014-69-A-0266

PROJ: NR-049-345

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Put in Information Systems and  
Networks, p 117-131 1975. See also report dated Dec  
73, AD-774 740.DESCRIPTORS: \*Communications networks, Cost  
effectiveness, Integer programming, Mathematical  
modelsIDENTIFIERS: \*Computer networks, \*Benefit cost  
analysis (U)

With the establishment of several computation-communication networks several questions arise as to the cost-effectiveness of a network for a particular potential user. Analysis is necessary to determine which software systems can be established and used on a network rather than the internal computer of user's organization. The timings of transitions to the network must also be found. A methodology for cost/benefit analysis is presented. For multiple systems, an extended horizon and restricted resources, an integer programming method is developed. Approximations for planning and a discussion of stability are given. A numerical example is included. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 186 15/5

ARMY PROCUREMENT RESEARCH OFFICE FORT LEE VA

The Design to Unit Production Cost  
(DTUPC): Range of Applicability to  
Development Procurements.

(U)

DESCRIPTIVE NOTE: Final rept.,  
OCT 74 70P Newlin, Kimrey D. ; Carter,  
Shirley H. ;  
REPT. NO. PRO-304

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Government  
procurement, \*Army procurement, Scientific research,  
Weapon systems, Logistics planning, Contracts (U)  
IDENTIFIERS: \*Design to cost, \*Design to unit  
production cost, Benefit cost analysis (U)

The merits of Design to Unit Production  
Cost (DTUPC) as a method of procurement are  
currently being heralded by the Department of  
Defense and Army. The goal of lower  
acquisition costs is very appealing. To date only  
a few contracts which have incorporated DTUPC have  
been awarded and only limited experience exists at  
this point in time. The purpose of this study was  
to determine the applicability of DTUPC to AMC  
development procurements. The findings of this  
study indicate that DTUPC provisions should not be  
applied to development procurements if contract value  
does not exceed \$1 million or projected production  
contract values do not \$4 million. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 185 15/5

ARMY PROCUREMENT RESEARCH OFFICE FORT LEE VA

Cost Growth: Effects of Share Ratio and  
Range of Incentive Effectiveness.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUL 74 56P Launer, Robert L. ;  
REPT. NO. PRC-007-4

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Government  
procurement, \*Army procurement, Logistics planning,  
Cost estimates, Statistical analysis (U)  
IDENTIFIERS: \*Cost growth, Cost overruns, Cost  
underruns (U)

This report addresses cost growth problems that  
have been experienced with CPIF contracts in the  
Army Materiel Command, especially those  
problems related to the incentive structure itself.  
The data base is composed of 53 randomly selected  
CPIF contracts completed between 1964 and 1971 with  
initial price of \$500,000 or more. The important  
major findings are that: (a) The use of the  
most probable cost for target costs (directed by  
ASPR) as opposed to expected cost, produces about  
20 percent contract cost growth. (b) There is a  
positive correlation between contractor's share of  
underrun and contractual adjustments and a negative  
correlation between overrun and the contractor's  
share for overruns. (c) The contractor's share  
of underrun and overrun is less than the negotiated  
share, on the average, while his profit for final  
costs which are above the upper limit of the range of  
incentive effectiveness is occasionally far greater  
than the negotiated minimum profit. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A010 960 15/5 14/4

RAND CORP SANTA MONICA CALIF

Getting 'Real' Data for Life-Cycle Costing.

(U)

JAN 75 18P Fiorello, Marco R. :  
REPT. NO. P-5345

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems. \*Life cycles.  
\*Costs. Estimates. Reliability. Data acquisition

(U)

The process of identifying, collecting and using historical data for estimating the life-cycle costs of a weapon system is discussed. The focus is on data-related problems which currently constrain the accuracy and reliability of life-cycle cost estimates. Particular attention is given to the costs of ownership. A case example is provided to illustrate the estimation of life-cycle costs using macro cost data for an operational weapon system. Some of the uncertainties inherent in the data collection and analysis processes are also discussed. Specific recommendations include implementing operationally consistent life-cycle cost estimation procedures, improving weapon system cost visibility in cost data systems, establishing and maintaining a nomenclature directory, implementing better cost allocation rules, anticipation of life-cycle cost decision data requirements, and constructing and maintaining a special data base for life-cycle cost analysis and methodology development.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 971 15/3 15/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The Requirements Determination Process for Naval Weapon Systems: An Organizational Analysis.

(U)

DESCRIPTIVE NOTE: Master's thesis.

MAR 75 62P Probst, Lawrence E. : Wilson,  
Richard A. :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems. \*Cost effectiveness.  
\*Naval procurement. Military requirements.  
Research management. Naval planning. Mission profiles. Department of Defense. Acquisition. Naval logistics. Theses

(U)

IDENTIFIERS: \*Logistics management

(U)

The requirements determination process for naval weapon systems should lead to the most cost effective solution to meet perceived defense mission deficiencies. The thesis analyzes current Navy requirements determination procedures and evaluates the effectiveness of recent modifications in correcting previously recognized shortcomings in this portion of the acquisition process. A current weakness identified in the navy procedural organization is the designation of platform-oriented DCNOs as Force and Mission Sponsors. Specific recommendations to correct this deficiency include the realignment of existing DCNO Warfare Areas and Logistics with DCNO Mission Areas which are coincident with the RDT and E Planning Categories of Strategic Deterrence. Sea Control. Projection of Power Ashore and Mission Support.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 951 5/1 15/5

ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS) WASHINGTON D C

Guide for Monitoring Contractors' Indirect Cost.

JUL 74 100P

## UNCLASSIFIED REPORT

Availability: Paper copy available from GPO.  
SUPPLEMENTARY NOTE: See also report dated Dec 73, AD-772 078.

DESCRIPTORS: \*Military budgets, \*Contracts, \*Cost analysis, Management planning and control, Management information systems, Analysis of variance, Guides

IDENTIFIERS: \*Indirect costs, Contract administration, Defense contracts

This Guide is directed toward better control of the indirect costs, or overhead, particularly in those plants which perform major Government contracts. It does not relieve contractor management of its traditional responsibility to manage and control. It does point out what the Government expects of contractor management and how the Government would monitor their efforts. Effective control of indirect costs involves tests of reasonableness, allowability, and allocability. Of these, the tests of reasonableness relates both to the reasonableness of the dollar amount of a cost and to the reasonableness of the contractor's action in incurring the cost. It is essential that those tests be vigorously applied to all costs, including indirect costs which account for a very large portion of the procurement dollars.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 931 15/5

ARMY WAR COLL CARLISLE BARRACKS PA

The Higher Costs of Buying Less.

(U)

DESCRIPTIVE NOTE: Student essay.  
FEB 75 26P Moses, David M. :

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Department of Defense, \*Military procurement, \*Costs, Contracts, Scheduling, Spare parts, Standardization

(U)

The study examines reduced procurements for materials for the Department of Defense which have caused higher unit prices. Recommendations are provided which would offset the higher costs including use of standard parts, timeliness of procurements and breakout of reprocurments from the prime contractors.

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 910 5/1 6/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Alcoholism in the Navy: A Cost Study. (U)

DESCRIPTIVE NOTE: Master's thesis,  
MAR 75 102P Sanders, Robert Tracy ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Alcoholism, \*Naval personnel, \*Cost analysis, Management information systems, Costs, Classification, Reviews, Statistical data, Treatment, Prevention, Questionnaires, Damage, Time, Losses, Education, Theses (U)  
IDENTIFIERS: Recommendations (U)

The primary objective of this thesis is to estimate a lower limit of costs which are associated with the Naval alcoholic. The costs are estimated in four specific areas: damage and loss of Navy property, loss of work due to medical problems, loss of work due to drinking patterns, and legal and administrative expenses. Such an estimate should be useful in more accurately calculating the savings involved when conducting cost analyses in the future. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 907 13/10 5/1 15/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The Organizational Impact of C/SCSC Upon the Supervisor of Shipbuilding. (U)

DESCRIPTIVE NOTE: Master's thesis,  
MAR 75 93P Fitzgibbons, Thomas Arthur ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Shipbuilding, \*Management planning and control, \*Costs, \*Naval logistics, Naval planning, Contracts, Scheduling, Standards, Skills, Training, Logistics planning, Theses (U)  
IDENTIFIERS: \*Logistics management (U)

Developing a management control system that will meet the needs of the government and its contractors has been a difficult task, particularly in shipbuilding. Only two Supervisors of Shipbuilding, SUPSHIPS Bath and Groton, have been involved with the implementation of the Cost/Schedule Control Systems Criteria on a major shipbuilding contract. The approach taken by each was quite different, and both differed from the NAVSEA suggested approach. These approaches are analyzed and measured against skill and training standards outlined by the Joint Logistic Commanders, in order to determine the advantages and disadvantages of each. Lastly, an approach is recommended to NAVSEA and SUPSHIPS which incorporates the lessons learned. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 844 14/1 15/3 15/5

RAND CORP SANTA MONICA CALIF

An Appraisal of Logistics Support Costs  
Used in the Air Force IROS Program.

(U)

DESCRIPTIVE NOTE: Interim rept..

FEB 75 53P Fiorello,Marco ;Dey,Patricia

Konoske ;

REPT. NO. R-1569-PR

CONTRACT: r44620-73-C-0011

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*weapon systems,  
\*Logistics support, \*Air Force procurement,  
Attack bombers, Reliability, Life cycles, Costs,  
Acquisition, Logistics planning, Department of  
Defense, Systems management, Systems engineering,  
Air Force logistics command

(U)

IDENTIFIERS: \*Logistics management, IROS(Increase  
Reliability of Operational Systems),  
Increase reliability of operational systems, A-  
70 aircraft, A-7 aircraft

(U)

The report evaluates the K051 logistic support  
cost reports used by the Air Force Increase  
Reliability of Operational System (IROS)  
program. This program, in an effort to increase the  
reliability of operational systems, collects detailed  
cost data from these reports on weapon systems and  
subsystems. The K051 cost reports were assessed  
by comparing their costs to reference costs from  
other data collection systems at the base and depot  
levels, for the Air Force Corsair II. It  
is seen that the K051 reports do not reflect  
certain pertinent support costs, such as costs for  
weapon system aerospace ground equipment,  
maintenance, modification hardware, and certain  
spares; even in those categories for which the K051  
reports do provide costs, they are reported  
incompletely and in a disproportionate manner.  
Recommendations are made for correcting and  
extending the IROS K051 reports.

(U)

AD-A009 844

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 576 17/4

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Cost Estimating Relationships for Naval  
Surface Ship Electronic Warfare  
Equipment.

(U)

DESCRIPTIVE NOTE: Master's thesis.

MAR 75 43P Moore,Raymond Edward . III:

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Electronic warfare, \*Cost estimates,  
Electronic equipment, Naval vessels, Cost  
analysis, Theses

(U)

The study addresses the problem of estimating the  
development, procurement, and installation costs of  
surface ship electronic warfare equipment of the  
future. The Cost Estimating Relationships  
(CERs) were developed using the following  
factors: year of development, weight, volume,  
sensitivity, power output, gain, complexity and dummy  
variables for active equipment, equipment designed  
for large ships and one for those designed for small  
ships. Cost estimates are made for three systems  
presently under development by Raytheon Company  
and Hughes Aircraft Company under a design-to-  
price program.

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 189 15/5 5/1 19/3

ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING CENTER

The Concept of Life Cycle Costing Applied to the MICV Project.

(U)

DESCRIPTIVE NOTE: Final rept..

MAR 75 48P Tutka, James L. ;

REPT. NO. USAMC-TC-02-08-75-229

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost estimates, \*Life cycles, \*Combat vehicles, \*Contract administration, Contracts, Reliability, Mathematical models

(U)

IDENTIFIERS: \*Indifference contracting, Life cycle costing

(U)

The study presents a new combination of Life Cycle Costing and Linear Indifference based on the MICV (Mechanized Infantry Combat Vehicle) project. A payment plan, based directly on the mean miles between failure, will be utilized in the program. With the establishment of the contracting plan, the consumer is rendered indifferent to the reliability of the product.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 183 5/1 15/5

ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING CENTER

Managing Cost Overrun Engineering Change Proposals.

(U)

DESCRIPTIVE NOTE: Final rept..

APR 75 13P Mariutto, William F. ;

REPT. NO. USAMC-ITC-02-08-74-211

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement, \*Cost estimates, Contracts, Regression analysis, Mathematical models, Mathematical prediction

(U)

IDENTIFIERS: \*Cost overruns

(U)

This research report examines data collected representing cost estimates for engineering changes and the actual cost of the change. It gives a picture of the outcome of the present method of approval authority at the United States Army Electronics Command. The history of past Cost estimates is reviewed and by use of regression analysis an attempt is made to control possible cost overruns in the future. This data revealed a serious deficiency in certain areas and a recommendation is made to revise the present method to try to reduce the serious cost overruns that occurred.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 120 15/5

NAVY FLEET MATERIAL SUPPORT OFFICE MECHANICSBRG PA  
OPERATIONS ANALYSIS DEPT

Analysis of Proposed Stock Range Rules.

(U)

APR 75 50P Engelman, J. L. ;  
REPT. NO. 119  
PROJ: FMSO-971190

UNCLASSIFIED REPORT

DESCRIPTORS: \*Inventory control, \*Naval procurement,  
\*Cost effectiveness, \*Logistics planning,  
Operations research, Systems analysis,  
Mathematical models, Naval planning, Logistics  
support, Department of Defense, Policies, Naval  
logistics (U)

IDENTIFIERS: \*Stock level control, \*Logistics  
management (U)

The provisioning process at the Inventory  
Control Points of the various services are  
thought to be the source of much excess stock. The  
Department of Defense has recently issued policy  
on the range determination. The cost equation  
considers the costs to stock with no demand, to stock  
with demand, and to satisfy demand for non-stocked  
items. Alternate models are permitted if time-  
weighted requisitions short is a consideration in the  
model. The Navy in the recent past developed  
such a model. The study compares performance of  
the Navy model, the DOD model, and current rules  
used at a Navy Inventory Control Point.  
The Navy model was more cost-effective than the  
DOD model, but neither model attained the response  
time of current rules. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 096 15/5 6/8

ARMY NATICK LABS MASS

The Development of Alternative Food Cost  
Indexes. (U)

DESCRIPTIVE NOTE: Technical rept.  
NOV 74 80P Brandt, J. ;  
REPT. NO. USA-NLABS-TR-75-67-0...  
PROJ: DA-1-T-762713-AJ-45  
TASK: 1-T-762713-AJ-4501

UNCLASSIFIED REPORT

DESCRIPTORS: \*Food, \*Cost analysis, \*Department of  
Defense, Food dispensing, Systems analysis,  
Military rations, Menu, Dining halls (U)

A number of different methods have been developed  
and evaluated for creating a Food Cost Index  
(FCI). Pending passage of a Uniform Ration  
Law (URL), it is recommended that a food subgroup  
type FCI be formulated consistent with the  
provisions of the existing Navy Ration Law  
(NRL) and with actual military food utilization  
patterns. After the adoption of a new URL, an  
improved FCI should be formulated using a least  
squares technique applied to the latest military food  
utilization data. A reference menu approach for  
determining the Basic Daily Food Allowance  
(BDFA) should also be further developed and  
evaluated. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 074 15/5 13/8

RAND CORP SANTA MONICA CALIF

Production Rate and Production Cost.

(U)

DEC 74 74P Large, Joseph P. ; Hoffmayer, Karl ; Kontrovich, Frank ;  
 REPT. NO. R-1609-PA/E  
 CONTRACT: DAHC15-71-C-0220

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military equipment. \*Production rate.  
 \*Cost estimates. Labor, learning curves.  
 Statistical analysis. Aircraft. Guided missiles  
 IDENTIFIERS: Design to cost

(U)

(U)

This study examines the effect of production rate on the cost of selected types of military hardware. It was assumed that production rate and unit cost varied inversely; and if that could be established, it was hoped that an estimating model could be developed that would express that relationship for various elements of cost. The analyses described here suggest that the effect of production rate on manufacturing labor, manufacturing materials, tooling, and engineering cannot be predicted with confidence.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A007 467 15/6

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A Cost/Benefit Matrix Model of Nuclear Deterrence.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
 MAR 75 57P Barbero, Mark ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Nuclear warfare. \*Deterrence. \*Cost analysis. Military strategy. National defense. Nuclear weapons. Decision making. Theses  
 IDENTIFIERS: \*Nuclear deterrence. \*Cost benefit analysis. \*First strike capability

(U)

(U)

This thesis develops a cost/benefit matrix model of deterrence processes. The model is designed to assist analysis of complex multi-nation interactions when an issue vital to the national survival of each participant is in the balance. A variety of interactions are examined using the model to determine if deterrence exists. The analysis of the various interactions results in the conclusion that deterrence exists when an assured destruction capability exists. Further, deterrence is lost in certain cases when the assured destruction capability is not maintained.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A007 437 15/5

PLANNING RESEARCH CORP MCLEAN VA

Navy Reliability and Maintainability Policy Study.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 71-Feb 74.  
 AUG 74 176P Bloomquist, Charles E. ;  
 Grainger, George R. ; Poland, James R. ; Reardon,  
 Francis P. ;

REPT. NO. PRC-R-1810  
 CONTRACT: N00014-72-C-0007

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval equipment. \*Maintainability.  
 \*Reliability. Life cycles. Cost analysis.  
 Logistics support. Cost effectiveness. Ship  
 auxiliary equipment. Ship structural components  
 IDENTIFIERS: Life cycle costing

(U)

(U)

This report covers the investigation of all major reliability, maintainability, and availability (RMA) policies that affect the acquisition of hull, mechanics, and electrical equipments for the Navy. Acquisition includes all life-cycle phases from concept formulation through equipment disposal. Emphasis is placed on RMA policies during all the design phases, the maintenance/overhaul phase, and the redesign phase. In addition, data systems used to monitor the effectiveness of the equipments, as well as the analytical techniques used to manipulate the data to provide RMA indices, are examined. Personnel training policies are also investigated.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD-A007 287 15/5

DEFENSE LOGISTICS STUDIES INFORMATION EXCHANGE FORT LEE VA

Commodity Type as a Factor in Contract Cost Growth.

(U)

JUN 74 30P Murtagh, Brian N. :

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army procurement. \*Contracts. \*Cost analysis. \*Logistics planning. Army equipment. Costs. Logistics support. Theses  
 IDENTIFIERS: \*Logistics management. \*Cost growth. Price changes

(U)

(U)

The Army Procurement Research Office (PRO), Institute of Logistics Research, U.S. Army Logistics Management Center, has conducted a number of studies to determine the causes of contract cost growth in Army procurements. The study is based on the data used in a May 1973 report. Whether the commodity type effects contract type or the results of the contract in relation to price change was investigated.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A007 125 5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

A Product Improved Method for Developing a Program Management Office Estimated Cost at Completion.

(U)

DESCRIPTIVE NOTE: Research rept..  
JAN 75 58P Holeman, J. B., Jr.

UNCLASSIFIED REPORT

DESCRIPTORS: \*Management planning and control. \*Cost estimates. Budgets. Government procurement. Department of Defense  
IDENTIFIERS: \*Project management

(U)

(U)

This booklet describes a product improved method for developing a DOD program management office (PMO) estimated cost at completion (EAC). The technique was developed to assist the PMO in checking the reasonableness of the EAC provided by contractors validated under the cost/schedule control systems criteria (C/SCSC). The booklet itself was designed and written to be used at the working level by PMO members of the program control/management division or the business/finance office.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A007 121 19/1

ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY ABERDEEN PROVING GROUND MD

A Logistic/Cost-Effectiveness Model for Flares.

(U)

DESCRIPTIVE NOTE: Technical rept..  
FEB 75 52P Sheldon, John F. :  
REPT. NO. AMSAA-TR-103  
PROJ: DA-1-T-765706-M-541

UNCLASSIFIED REPORT

DESCRIPTORS: \*Flares. \*Cost effectiveness. \*Logistics planning. \*Night warfare. Mission profiles. Tactical warfare. Military procurement. Computerized simulation. Computer programs. Area coverage. Intensity. Cost estimates. Illumination  
IDENTIFIERS: \*Logistics management

(U)

(U)

The model establishes a quantitative criterion for the cost and logistic numbers of flares necessary to satisfy the need for light to see and engage enemy targets at night.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A007 064 15/5

RAND CORP SANTA MONICA CALIF

Directed Licensing: An Evaluation of a  
Proposed Technique for Reducing the  
Procurement Cost of Aircraft.

(U)

DEC 74 145P Carter, Gregory A. ;  
REPT. NO. R-1604-PR  
CONTRACT: F44620-73-C-0011

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air force procurement, \*Military  
aircraft, \*Cost analysis, Contracts, Agreements,  
Costs, Reduction, Logistics planning (U)  
IDENTIFIERS: \*Directed licensing, \*Competitive  
bidding, \*Logistics management (U)

The study evaluates the feasibility of introducing price competition into military aircraft procurement by the technique of 'directed licensing,' whereby the Government obtains from a weapon system developer, a commitment for rights to production data and an agreement to license whenever the Government designates. Case studies of related types of aircraft procurement are presented, showing that competitive bidding has resulted in substantial savings as compared to sole-source procurement. Techniques for moving aircraft production from one manufacturer to another are described to indicate the technical feasibility of the directed licensing concept, and a minimum-risk way in which directed licensing could be tried is outlined. Although this study focuses on aircraft procurement, the results should be equally applicable to procurement of other complex weapon systems. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 7CM07

AD-A006 783 15/5

CENTER FOR NAVAL ANALYSES ARLINGTON VA INST OF NAVAL  
STUDIESEstimating the Marginal Balance of Payments  
Cost of Overseas Homeporting.

(U)

DEC 74 22P Stoloff, Peter H. ;Aucella,  
John P. ;McKinley, Harold M. ; Jr.;Ruzsack,  
Richard A. ;  
REPT. NO. CRC-271  
CONTRACT: N00014-63-A-0091

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval vessels, \*Costs, \*Naval  
personnel, \*Logistics planning, Overseas,  
Maintenance, Military facilities, Logistics  
support, Cost analysis, Naval logistics (U)  
IDENTIFIERS: \*Balance of payments, \*Overseas  
homeporting, \*Logistics management (U)

A procedure for estimating the balance of payments cost of overseas homeporting is developed. Planning factors based on recent overseas homeporting experience are provided, in tabular form. By specifying certain characteristics of the overseas homeporting program, such as the ships to be homeported, the area, and the availability of base support, Navy planners can choose the appropriate planning factors to use in the estimation procedure. An application of the procedure using planning factors is shown. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A006 508 5/2 15/5

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Designing a Manual Cost Data Base.

(U)

DESCRIPTIVE NOTE: Final rept.,

FEB 75 29P Stephenson, Hal W. ;

REPT. NO. TROSCOM-TR-75-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Costs, \*Data bases, Indexes, Libraries, Information retrieval, Data processing, Manual operation

(U)

A six-step method for designing a manual cost data base is presented in this report. Indexes and sections of use in a cost data base are defined. An example is given. Prototype forms for eight indexes, an accession logbook and an abstract logbook are illustrated. The description is sufficiently detailed so a military organization with significant cost research activities could adapt the system to its own needs.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A006 505 1/3

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO

Optimization of the Time Between Aircraft Overhauls by Minimizing Maintenance Cost.

(U)

DESCRIPTIVE NOTE: Final rept.,

JAN 75 70P Smith, Shirley J. ; Gaffney,

Florence A. ; Schulze, Billy R. ; Fox, D. Frank

; Stone, Blaine Y. ;

REPT. NO. USAAVSCOM-TR-74-53

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army aircraft, \*Maintenance, \*Cost analysis, Life cycles, Costs, Mathematical models, Optimization.

(U)

The purpose of the study was to investigate the feasibility of determining when an aircraft should be overhauled in order to minimize the life time maintenance cost of the aircraft. It was assumed that the cost of field maintenance increases as the aircraft's flight hours increase. Also, it was assumed that following an overhaul the cost rate drops significantly, then increases again until an overhaul. The total life time maintenance cost is the sum of all field maintenance costs and all overhaul costs. Then, the optimum time between overhauls was found as that time for which the life time maintenance cost is a minimum.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A006 344 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

Cost-Estimating Relationships for Predicting  
Life-Cycle Costs of Inertial Measurement  
Unit Maintenance.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JAN 75 92P Lynch, Lynn M.; Raymond,

Neil V.;

REPT. NO. SLSR-13-75A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Inertial navigation, \*Maintainability,  
\*Cost estimates, \*Inertial measurement units, Life  
cycles, Mathematical models, Maintenance, These

(U)

A major problem to life cycle cost planners is the  
scarcity of tools available for use in the conceptual  
phase of system design and acquisition that  
accurately predict operational and support costs.  
This thesis developed a cost-estimating  
relationship (CER) that predicts maintenance costs  
of inertial measurement units (IMUs) using only  
design and policy data that would be available to  
planners in the conceptual phase of weapon system  
acquisition. The cost estimated is the average  
quarterly maintenance cost per aircraft. The  
estimating variables are selected based on two  
criteria: (a) Is the variable one that,  
viewed logically, would affect maintenance costs.  
(b) Is the variable one that would be known to  
planners in the conceptual phase of weapon system  
acquisition. The CER was developed by the  
ordinary least squares method of multiple regression  
analysis.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A006 341 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

An Economic Model to Determine Costs when  
Intermediate Level Repair Uses Remotely  
Located Automatic Test Equipment.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JAN 75 112P Garrett, James T. J.;

Gentry, Neal W.;

REPT. NO. SLSR-13-75A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force equipment, \*Maintenance,  
\*Cost analysis, Jet fighters, Repair,  
Maintenance equipment, Field equipment, Logistics  
support, These

(U)

IDENTIFIERS: \*Maintenance concept, F-15  
aircraft

(U)

Since the 1950's, the Air Force has recognized  
the advantages and flexibility of repairing items at  
the base or intermediate level. However, over the  
past few years the increased complexity and  
sophistication of modern weapon systems has brought  
about the advent of complex and expensive automated  
test equipment. In order to maintain the  
advantages of intermediate repair, the expensive test  
equipment had to be procured for and maintained by  
the individual operating bases; thus producing a very  
high life cycle cost. In an effort to reduce cost  
in the face of austere funding, a study was conducted  
to determine the economic feasibility of centralizing  
the automatic test equipment.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A006 335 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

Evaluation of Proposed Criteria to be Used in  
the Selection of Candidates for Reliability  
Improvement Warranties.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JAN 75 118P Dunn, Payton E. Jr.;

Dityan, Andrew W.;

REPT. NO. SLSR-7-75A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force equipment, \*Maintenance,

\*Cost analysis, Air Force procurement, Life  
cycles, Costs, Contracts, Theses

(U)

IDENTIFIERS: \*Life cycle costing

(U)

As DOD's percentage of the budget continues to  
decline, there is an increasing need to get more for  
the defense dollar. One way to achieve this  
objective is through the use of Reliability  
Improvement Warranties (RIW). The RIW  
calls for a total repair contract based on a pre-  
determined Mean Time Between Failure  
(MTBF). The contractor to whom the contract is  
let can realize increased profits by increasing the  
MTBF of the item. He does this by initiating  
'No Cost' Engineering Change Proposals  
which will increase item performance and reliability.  
The study was designed to survey the existing  
population of items covered by a RIW to determine  
what characteristics they had in common.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A006 214 15/5

ARMY MATERIEL COMMAND ALEXANDRIA VA

AMC Guide for Design to Unit Production  
Cost (DTUPC).

(U)

DEC 74 80P

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army procurement, \*Production control,

\*Cost analysis, Industrial production, Contracts,

Contract administration, Cost estimates, Logist

(U)

IDENTIFIERS: \*Design to cost, \*Design to unit

production cost, \*Contract proposals, \*Cost

reduction

(U)

The purpose of this guide is to provide assistance  
to those functional activities of the US Army  
Materiel Command (AMC) charged with the  
responsibility of estimating, applying, and/or  
controlling the design-to-cost concept. It is  
particularly concerned with the establishment of unit  
cost goals in development contracts as design  
parameters for production of hardware items. These  
specific development contract values managed by AMC  
are referred to as Design To Unit Production  
Cost (DTUPC) goals. This guide supplements  
basic information provided in the Joint Logistics  
Commander's conceptual guide on design-to-cost  
published October 1973.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A006 205 15/5

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO SYSTEMS ANALYSIS OFFICE

A Cost-Effectiveness Model, Choice through Preferences.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
FEB 75 46P Ross, Frank W. ;  
REPT. NO. AMSAV-D-74-20  
MONITOR: USAAVSCOM TR-74-51

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military supplies, \*Decision making,  
\*Cost effectiveness, Logistics, Costs, Military  
procurement, Delphi techniques, Trade off  
analyses

(U)

IDENTIFIERS: Benefit cost analysis

(U)

A cost-effectiveness model is developed where a constrained minimum solution defines the appropriate choice of systems and system designs. A significant advantage of this model over existing ones is the measurement of effectiveness by an ordinal preference function. This function describes the preferences of decision-makers for various design characteristics as implied by the Delphi Method. The technique should find important application in areas where selections must be made among various systems and system designs.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A005 426 1/3 14/1

GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE DIV

Weapon System Costing Methodology for  
Aircraft Airframes and Basic Structures.  
Volume II. Supporting Design Synthesis  
Programs.

(U)

DESCRIPTIVE NOTE: Technical rept. Jul 72-Dec 73.  
SEP 74 73P Kenyon, R. E. ;  
CONTRACT: F33615-72-C-2633  
PROJ: AF-1368  
TASK: 136802  
MONITOR: AFFDL TR-73-129-Vol-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-783 639.

DESCRIPTORS: \*Aircraft, \*Airframes, \*Cost  
estimates, Costs, Cost analysis, Aerodynamic  
control surfaces, Structural members, Computer  
programming

(U)

IDENTIFIERS: Design to cost, Cost estimating  
relationships, Design synthesis, APAS computer  
program

(U)

This volume describes the supporting programs used in conjunction with a cost estimating program to provide a trade study cost estimating technique for aerodynamic surfaces. The supporting programs for the purpose of this discussion are defined as a structural synthesis program and a secondary structure synthesis program. The structural synthesis program is used for the analysis of primary structure and is called APAS (Automated Program for Aerospace-Vehicle Synthesis). The secondary structure synthesis program estimates geometry and weights, and performs parts definition for the aerodynamic surface leading edge, trailing edge, and tip components. The cost estimating adaptation is derived from programs originally developed under independent research and development.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A005 298 5/9

COOPER AND CO STAMFORD CONN

Evaluation of Methodology for Estimating the  
Cost of Air Force On-the-Job Training.

(U)

DESCRIPTIVE NOTE: Final rept. Oct 73-Jun 74,  
NOV 74 60P Samers, Bernard N. ;Dunham,  
Alan D. ;Nordhauser, Fred ;  
CONTRACT: F41609-72-C-0048  
PROJ: AF-2077  
TASK: 207703  
MONITOR: AFHRL TR-74-73

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 1974, AD-785  
141.

DESCRIPTORS: \*Job training, \*Cost analysis, Air  
Force training, Models, Surveys  
IDENTIFIERS: On job training

(U)  
(U)

The report describes the final phase of a study directed at the development of an on-the-job training (OJT) costing methodology. Utilizing a modification of survey techniques tested and evaluated during the previous phase, estimates were obtained for the cost of OJT for airman training from the 1-level (unskilled) to the 3-level (semi-skilled) in five category B Air Force specialties. The specialties studied were pavement maintenance (551X0); fire protection (571X0); food service (622X0); fuel service (631X0); and material facilities (647X0). The cost per graduate of OJT for these specialties was compared to the cost per graduate of resident school technical training. Supervisors were surveyed to determine if there was a difference in performance between OJT and technical school graduates in these AFSCs. Conditional cost models were also formulated and tested. The conditional cost models are based on an alternative or opportunity cost concept and represent a refinement of the original cost models. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A004 841 9/2 15/5

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND  
TECHNOLOGY DIVAutomatic Data Processing Costs in the  
Defense Department.

(U)

DESCRIPTIVE NOTE: Final rept. Feb-Sep 74,  
OCT 74 70P Fisher, David A. ;  
REPT. NO. P-046  
CONTRACT: DAHC15-73-C-0200  
MONITOR: IDA/HQ 74-16529

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Data processing, \*Department of  
Defense, \*Cost analysis, Costs, Computer  
programming, Data processing equipment, Government  
procurement, Rental equipment, Contracts,  
Maintenance  
IDENTIFIERS: \*Cost estimates

(U)  
(U)

This paper is concerned with the cost of providing automatic data processing (ADP) services in the Department of Defense. Available cost information for ADP systems in DOD is collected. Major components of those costs are identified. The costs are partitioned among computer hardware, software and other ADP. Certain trends are identified, and an estimate of total annual ADP costs in DOD is made. Total annual ADP costs are estimated at \$6.2-\$8.3 billion or 30%-50% of all electronics expenditures in DOD. Software accounts for about 45% of all ADP costs and one-third of the ADP man-years. In the last five years the number of reported DOD computer systems has increased 28%, but the number reporting costs has declined, resulting in no increase in reported costs. Over the last five years there has been a shift from use of in-house ADP personnel toward contract services, and from rental to purchase of ADP equipment.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A004 568 12/1 5/3 5/9

CALIFORNIA UNIV LOS ANGELES WESTERN MANAGEMENT SCIENCE INST

Optimal Consumption with a Stochastic Income Stream.

(U)

DESCRIPTIVE NOTE: Interim rept.,  
74 15P Miller, Bruce L. ;  
CONTRACT: AF-AFOSR-2349-72  
PROJ: AF-9769  
TASK: 976905  
MONITOR: AFOSR TR-75-0079

## UNCLASSIFIED REPORT

Availability: Pub. in Econometrica, v42 n2 p253-266, Mar 74.

DESCRIPTORS: \*Stochastic processes, \*Costs, \*Labor, Mathematical models, Distribution functions, Mean, Economics, Risk, Investments, Optimization, Budgets, Probability, Reprints  
IDENTIFIERS: \*Interest rates, Utility functions, Riskless investment (U)

A infinite horizon consumption model is considered where the labor part of income is random. An upper bound on optimal consumption is obtained by considering the expected value of the optimal return function in the deterministic labor income case. This upper bound on consumption is easily shown to be lower than the value of optimal consumption in the case where the random labor income is replaced by its mean. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A003 922 15/5

LOGISTICS MANAGEMENT INST WASHINGTON D C

Arm, Inventory Cost Parameters.

(U)

DEC 74 88P Kaiser, Robert D. ; Boisseau, H. J. ;  
REPT. NO. LWI-74-15  
CONTRACT: SD-321  
PROJ: SD-321-22

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army procurement, \*Cost analysis, \*Logistics support, Inventory control, Mathematical models, Regression analysis, Cost estimates, Policies, Material, Maintenance, Repair, Inflation (Economics)  
IDENTIFIERS: \*Logistics management, Stock level control, Computer aided analysis (U)

The study establishes values for cost-to-order and cost-to-hold at Army Direct Support Units (DSUs) handling Class IX (Repair Parts) items. It also includes detailed procedures by which the Army may update those parameters. It recommends that the Army introduce a new constraint policy for setting reorder quantities at DSUs, and that the value of the cost-to order parameter be adjusted annually for inflation. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A003 905 15/5

NAVAL WEAPONS ENGINEERING SUPPORT ACTIVITY WASHINGTON D C

Navy Weapon System Life-Cycle Cost Model,

(U)

SEP 74 133P Opresko, Gregory A. ;  
REPT. NO. NAVWESA-R-746

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Naval procurement,  
\*Cost analysis, \*Logistics support, Life cycles,  
Mathematical models, Systems engineering, Cost  
estimates, Logistics planning  
IDENTIFIERS: \*Logistics management

(U)

(U)

The Navy Weapon System Life-Cycle Cost Model is a generalized user-oriented cost model that calculates and displays system costs in accordance with a Work Breakdown Structure (WBS) or similar hierarchical cost level scheme. It is applicable to any development program in which costs must be monitored and recalculated for frequent changes in cost-related parameters. The model is intended for use by a cost analyst.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A003 436 15/5

OFFICE OF THE COMPTROLLER OF THE ARMY WASHINGTON D C  
DIRECTORATE OF COST ANALYSISOperating and Support Costing Guide:  
Army Weapon Systems.

(U)

DEC 74 32P

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Army procurement,  
\*Cost analysis, \*Logistics support, Cost  
estimates, Life cycles, Logistics planning  
IDENTIFIERS: \*Logistics management

(U)

(U)

The guide provides an ASARC/DSARC/CRAIG framework for review of major weapon system life cycle operating and support (O and S) cost estimates. It presents standard O and S cost elements, a standard approach to estimating O and S costs and a standard approach to documenting the cost estimates derived. This guide formalizes the procedures for O+S costing throughout the Army cost analysis community. It reflects the cost elements and methodologies to be used by HQDA in analyzing weapon system O and S cost estimates prepared by subordinate commands. Because it is conceptually related to the CAIG O and S Guide, the guide will be used as the basic O and S costing terms of reference before the CAIG.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A003 354 1/3 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Joint Generalized Least Squares Applied to Cost Estimation for Fighter Aircraft.

(U)

DESCRIPTIVE NOTE: Master's thesis.

DEC 74 103P C'Brien, Patrick W. ;

REPT. NO. GSA/SM/74r ,

UNCLASSIFIED REPORT

DESCRIPTORS: \*Jet fighters, \*Cost estimates, \*Least squares method, Avionics, Airframes, Jet engines, Cost analysis, Theses

(U)

IDENTIFIERS: F-100 aircraft, F-101 aircraft, F-102 aircraft, F-104 aircraft, F-105 aircraft, F-106 aircraft, T-38 aircraft, F-4 aircraft

(U)

Joint Generalized Least Squares is an extension of least squares techniques which decreases statistical uncertainty in derived regression equations. The technique is applied to historical costs for airframes, avionics, and engines in fighter aircraft. A comparison is made of parametric cost estimating relationships derived using ordinary and Joint Generalized Least Squares to demonstrate reductions in statistical uncertainty.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A003 353 1/3 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Cost Estimating Relationships for Procurement Costs of Airborne Digital Computers and Inertial Measurement Units for Use in Remotely Piloted Vehicles.

(U)

DESCRIPTIVE NOTE: Master's thesis.

DEC 74 80P Funkhouser, Kenneth V. ;

REPT. NO. GSA/SM/74r-3

UNCLASSIFIED REPORT

DESCRIPTORS: \*Remotely piloted vehicles, \*Avionics,

\*Cost estimates, Digital computers, Inertial measurement units, Procurement, Costs, Theses

(U)

IDENTIFIERS: \*Cost estimating relationships

(U)

Parametric cost estimating relationships (CER's) are developed to predict procurement costs of airborne digital computers and inertial measurement units which are suitable for use in remotely piloted vehicles (RPV's). The CER's predict first unit recurring cost in 1974 dollars and can be incorporated with an appropriate learning curve to estimate average cost for a given production quantity. A brief discussion of a computerized parametric cost estimation technique, the RCA PRICE model, is provided to compare methodology, input requirements, and output. The predictive capabilities of the RPV CER's are compared to avionics procurement CER's developed by the Air Force Avionics Laboratory. The RPV CER's are generally more accurate than the AFAL CER's when procurement costs of equipment usable in remotely piloted vehicles are being estimated.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A003 352 1/3 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

An Extension of Cost Estimating Relationships for Airframes of Remotely Piloted Vehicles.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
 DEC 74 127P High, James D.; Rose, Howard  
 C. J. Jr;  
 REPT. NO. GSA/SM/74D-5

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Remotely piloted vehicles, \*Airframes,  
 \*Cost estimates, Fabrication, Production  
 engineering, Labor, Least squares method,  
 Theses

(U)

IDENTIFIERS: \*Cost estimating relationships,  
 Sensitivity analysis

(U)

Cost estimating relationships (CER's) were developed for remotely piloted vehicle (RPV) airframes. A limited data base consisting of drones and RPV's was augmented with airbreathing, preprogrammed missiles. Logarithmic and linear equations were developed where possible using ordinary least squares regression for six categories of cost: engineering, manufacturing labor, tooling, material, development support, and flight test.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A003 279 17/2 14/1

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint Tactical Communications. Volume II. System Effectiveness.

(U)

DESCRIPTIVE NOTE: Final rept..  
 NOV 74 113P Loughney, Thomas M. ;  
 REPT. NO. ITD-ORT-032-74-Vol-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Aug 74. AD-787 533.

DESCRIPTORS: \*Tactical communications, \*Cost effectiveness, Systems engineering, Models

(U)

The volume contains the following information:  
 A conceptual model of system effectiveness for Joint Tactical Communications Systems and Equipment; An approach to system effectiveness modeling; A system effectiveness methodology; Techniques for measurement and analysis; Measures of effectiveness.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZGM07

AD-A003 230 19/6 15/5

WATERVLIET ARSENAL N Y

Logistical Simulation Model for the Light  
Weight Company Mortar: A Technique for  
Computing Support Cost and Operational  
Availability.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
DEC 74 23P Fiscella, Russell ; Adams III,  
John R. ;  
REPT. NO. WVT-TR-74053  
PROJ: DA-1-J-664602-D-029, PRON-A1-4-54700-02-  
M1-M7

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Mortars, \*Logistics, \*Operational  
readiness, Maintainability, Spare parts, Logistics  
support, Costs, Computerized simulation, Value  
engineering

IDENTIFIERS: VERT computer program

(U)

(U)

This study was performed to determine the support  
cost of the LWCM for one year and the operational  
availability of the LWCM based on reliability,  
maintainability, and logistical inputs. A  
reliability distribution for each mortar component  
and the maintenance policy were input to a VERT  
computer program. Ammunition consumption was set  
at 10,000 rds a year. Repair parts were distributed  
at appropriate levels. The probability that parts  
would be on hand at each level and logistical  
downtime for each level was played. The most  
probable case showed a mean cost of \$2,714 to  
support the mortar and a mean operational  
availability of .93.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A002 681 15/5

MINNESOTA UNIV MINNEAPOLIS GRADUATE SCHOOL

Managerial Inventory Formulations with  
Stockout Objectives and Fiscal Constraints.

(U)

74 15P Schroeder, Roger G. ;

## UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics  
Quarterly, v21 n3 p375-388 Sep 74.

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Inventory analysis, \*Cost analysis,  
Mathematical models, Inventory control, Management  
planning and control, Lead time, Stockpiling,  
Abundance, trade off analyses, Reprints

(U)

Most inventory formulations seek to minimize the  
sum of ordering costs, holding costs, and stock  
costs; however, management often directs inventory  
policy by specifying a maximum investment level and/  
or a purchasing budget constraint. Within these  
limitations, they expect lower level managers to  
optimize some level of customer satisfaction, such as  
minimum stockouts or minimum shortages. The author  
has developed several cases of these 'managerial'  
inventory formulations and has presented some  
computational results.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A002 678 14/1 15/5

MICHIGAN UNIV ANN ARBOR

A General Treatment of Upper Unbounded and Bounded Hitchcock Problems.

(U)

74 21P Dwyer, P. S. ;

UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics Quarterly, v21 n3 p445-464 Sep 74.

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Costs, \*Logistics planning, \*Transportation, Matrices(Mathematics), Statistical distributions, Mathematical models, Range(Distance), Set theory, Transformations(Mathematics), Shipping, Cargo, Reprints

IDENTIFIERS: Hitchcock problem

(U)

(U)

This paper is designed to treat (1) the problem of the determination of the absolute minimum cost, with the associated assignments, when there is no limit,  $N$ , on the number of parcels available for shipment in a modified Hitchcock problem. This is accomplished with the use of a transformed cost matrix,  $C^*$ , to which the so-called transportation paradox does not apply. The general Hitchcock solution using  $C^*$  gives the cost  $T^*$ , which is the absolute minimum cost of the original problem, as well as sets of assignments which are readily transformed to give the general assignments of the original problem. The sum of these latter assignments gives the value of  $N$  sub  $u$ , the unbounded  $N$  for minimum cost. In addition, this paper is designed to show (2) how the method of reduced matrices may be used, (3) how a particular Hitchcock solution can be used to determine a general solution so that one solution using  $C^*$  can provide the general answer, (4) how the results may be modified to apply to problems with fixed  $N$ , and hence (5) to determine the function of the decreasing  $T$  as  $N$  approaches  $N$  sub  $u$  and finally (6) to provide a treatment when the supplies at origin  $i$  and/or the demands at destination  $j$ , are bounded. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A002 322 9/2

SOFTTECH INC WALTHAM MASS

Criteria for Evaluating the Performance of Compilers.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 73-Jun 74. OCT 74 353P Bloom, Burton H. ; Clark, Mac H. ; Feldman, Clare G. ; Coe, Robert K. ; CONTRACT: F30602-73-C-0321 MONITOR: RADC TR-74-259

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Compilers, Performance, Measurement, Computer architecture, Algorithms, Computer programming

(U)

IDENTIFIERS: \*Performance evaluation.

Computers, Parsing, Benefit cost analysis

(U)

The main purpose of this study was to develop criteria by which it will be possible to qualitatively measure and evaluate the performance of compilers, possibly operating on different computers, and possibly having different features. To satisfy this purpose, three technical questions were studied: (1) How can two compilers with the same features and operating in the same environment be compared. (2) If two compilers with the same features operate in different environments, how can their measured differences in performance be attributed to the environmental differences vs. the compiler differences. (3) How should a compiler buyer deal with the problem of evaluating compilers with different special features. These three questions were studied from a point of view that the answers should help provide a basis for conducting dollar cost/benefit analysis of compilers.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZCM07

AD-A002 204 21/4

RAND CORP SANTA MONICA CALIF

Fuel from Organic Matter.

(U)

OCT 73 26P Dugas, Doris J. ;  
REPT. NO. P-5100

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Energy conversion, \*Fuels, Organic materials, Photosynthesis, Vegetation, Farm crops, Forests, Trees, Algae, Corn, Sorghum, Wastes (Industrial), Solid wastes, Urban areas, Anaerobic processes, Yeasts, Fermentation, Pyrolysis, Quantities

(U)

IDENTIFIERS: Agricultural wastes, waste disposal, \*Solid waste disposal, Refuse, Cost estimates, Geographic locations

(U)

It has been suggested frequently that the solar energy stored in green plants and organic wastes could be tapped to provide an alternative to the dwindling resources of fossil fuels. The advantage would be a fuel source that is renewable and available in our own time. This paper investigates the amounts of energy that might be made available from organic sources, the approximate cost of producing it and converting it to a convenient fuel, and some of the implications of a large-scale agro-energy industry.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A002 013 4/2 15/5 14/1

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

On Determining Cost Effectiveness of an Army Automatic Meteorological System.

(U)

DESCRIPTIVE NOTE: Research and development technical rept..

NOV 74 13P Miller, Walter ; Engelbos, Bernard ;

REPT. NO. ECCM-5548

PROJ: DA-1-T-162111-AH-71

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army operations, \*Weather forecasting, Automatic, Mathematical models, Stochastic processes, Cost effectiveness

(U)

IDENTIFIERS: AMS (Automatic Meteorological System), Automatic meteorological system

(U)

Possible criteria for a cost effectiveness model for the Army Automatic Meteorological System are discussed. A determination of the nature of the problems expected to be encountered in satisfying these criteria appears similar to that of the construction of a stochastic model, where a careful balance between fidelity and tractability is essential. Barrier problems stemming from inadequacies in the interrelationship of weather and computer-played combat simulation models are also considered.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 747 15/5

COST ANALYSIS IMPROVEMENT GROUP WASHINGTON D C

Operating and Support Cost Development  
Guide for Aircraft Systems.

(U)

MAY 74 59P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Weapon systems, \*Life cycles, \*Cost  
analysis, Department of Defense, Logistics,  
Investments, Military budgets, Guides  
IDENTIFIERS: \*Cost estimates

(U)

(U)

This guide provides a DSARC/CAIG framework for  
review of new weapon system life cycle operating and  
support (O and S) cost estimates and describes  
methodologies and techniques that the Military  
Departments and the CAIG can use to develop and  
record these estimates.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 713 15/5 17/2

NAVAL ELECTRONICS LAB CENTER SAN DIEGO CALIF

Telecommunications Equipment Low-Cost  
Acquisition Method (TELCAM).

(U)

DESCRIPTIVE NOTE: Technical document.

JUL 74 120P Leffler, R. :

REPT. NO. NELC/TD-335

PROJ: NELC-Z269

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement, \*Communication  
equipment, Literature surveys, Environments,  
Costs, Life cycles, Low costs

(U)

The report presents the information on which  
TELCAM is based: the results of a literature  
survey and interviews with military and industrial  
personnel; an environmental study including test data  
on over 160 ships; and a life-cycle cost  
methodology.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD-A001 532 15/5

ARMY ARMAMENT COMMAND ROCK ISLAND ILL SYSTEMS ANALYSIS OFFICE

Economic Comparison of Wood-Preservative Treated and Untreated 105mm Ammunition Boxes (U)

DESCRIPTIVE NOTE: Technical note.

OCT 74 10P Eckman, Donald R. ;  
REPT. NO. SAO-Note-14

UNCLASSIFIED REPORT

DESCRIPTORS: \*Ammunition boxes. \*Wood. \*Treatment. \*Cost analysis. Preservatives. Deterioration. Tropical regions. Life expectancy (U)

This study examined the economic consequences of treating wooden ammunition boxes with a preservative to prevent rapid deterioration in tropical climates. The study was basically an expected-value analysis presented in terms of cost-indifferent storage duration with life expectancy of the treated and untreated boxes as parameters. The results indicated that it would not be reasonable to store ammunition in untreated boxes. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD-A001 065 9/3 15/5

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND TECHNOLOGY DIV

Electronics-X: A Study of Military Electronics with Particular Reference to Cost and Reliability. Volume 2: Complete Report. (U)

DESCRIPTIVE NOTE: Final rept. Feb-Oct 73.

JAN 74 432P Gates, Howard P. , Jr. ;  
Gourany, Barry S. ; Deitchman, Seymour J. ;  
Rowan, Thomas C. ; Keizer, C. David ;  
REPT. NO. R-195

CONTRACT: DA-C-5-75-C-0200

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Jan 74. AD-783 007.

DESCRIPTORS: \*Electronics. \*Military applications. Costs. Reduction. Cost analysis. Reliability (Electronics). Maintenance (U)

The report identifies the current DOD and industrial policies, procedures, and practices in development, production, and operational support that most significantly influence the cost and reliability of military electronics, and it recommends changes to reduce and control cost and to improve reliability. The report concentrates on five major, high-impact areas: (1) data collection and feedback, (2) requirements, (3) competition and management options, (4) reliability enhancement, and (5) maintenance training. Numerous other areas are discussed, and detailed recommendations are made in each. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 036 15/5 5/1

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
94%-96% R and D Curves and 67%-99%  
Production Curves. Volume 10.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 601P Johnson, George V. ;  
REP. NO. TROSCOM-TR-74-11-Vol-10

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
SUPPLEMENTARY NOTE: See also Volume 9, AD/A-001 035  
and Volume 11, AD/A-000 567.

DESCRIPTORS: \*Army operations. \*Production  
engineering. \*Cost analysis. Tables(Data)  
IDENTIFIERS: \*Quaternary S curves. \*Cost  
quantity relationships. Cost estimates

(U)

(U)

The Quaternary S-Curve was designed for cost-  
quantity adjustments necessary under these  
conditions: (1) when a cost estimate for a  
change in the production phase is needed and the  
production cost had there been no change is needed  
and (2) a relationship is needed to estimate R  
and D prototype costs, R and D production  
costs, full scale production preproduction model  
costs, and full scale production first unit costs.  
The estimates in (1) are particularly useful in  
negotiating changes to contracts. The  
relationships in (2) are useful in estimating  
Design To Unit Production Costs from cost-  
quantity data available in the R and D phase.  
This report contains: Table of 94% R and  
D curves; Table of 95% R and D curves;  
Table of 96% R and D curves.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 035 15/5 5/1

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
91%-93% R and D Curves and 67%-99%  
Production Curves. Volume 9.

(U)

MAY 74 599P Johnson, George V. ;  
REP. NO. TROSCOM-TR-74-11-Vol-9

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 8, AD/A-000 564  
and Volume 10, AD/A-001 036.

DESCRIPTORS: \*Army operations. \*Production  
engineering. \*Cost analysis. Tables(Data)  
IDENTIFIERS: \*Quaternary S curves. \*Cost  
quantity relationships. Cost estimates

(U)

(U)

The quaternary S-Curve was designed for cost-  
quantity adjustments necessary under these  
conditions: (1) when a cost estimate for a  
change in the production phase is needed and the  
production cost had there been no change is needed  
and (2) a relationship is needed to estimate R  
and D prototype costs, R and D production  
costs, full scale production preproduction model  
costs, and full scale production first unit costs.  
The estimates in (1) are particularly useful in  
negotiating changes to contracts. The  
relationships in (2) are useful in estimating  
Design To Unit Production Costs from cost-  
quantity data available in the R and D phase.  
This report contains: Table of 91% R and  
D curves; Table of 92% R and D curves;  
Table of 93% R and D curves.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 034 15/5 5/1

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
85%-87% R and D Curves and 67%-99%  
Production Curves. Volume 7.

(U)

MAY 74 599P Johnson, George V. ;  
REPT. NO. TRDSOM-TR-74-11-Vol-7

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
SUPPLEMENTARY NOTE: See also Volume 6, AD/A-000 562  
and Volume 8, AD/A-000 564.

DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, Tables(Data)

(U)

IDENTIFIERS: \*Quaternary S curves, Cost  
estimates, \*Cost quantity relationships

(U)

The Quaternary S-Curve was designed for cost-  
quantity adjustments necessary under these  
conditions: (1) when a cost estimate or a  
change in the production phase is needed and the  
production cost had there been no change is needed  
and (2) a relationship is needed to estimate R  
and D prototype costs, R and D production  
costs, full scale production preproduction model  
costs, and full scale production first unit costs.  
The estimates in (1) are particularly useful in  
negotiating changes to contracts. The  
relationships in (2) are useful in estimating  
Design To Unit Production Costs from cost-  
quantity data available in the R and D phase.  
This report contains: Tables of 85% R and  
D curves; Table of 86% R and D curves;  
Tables of 87% R and D Curves.

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AD-A001 034

UNCLASSIFIED

PAGE 340

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 033 5/9 15/5

GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS  
DIV

An Econometric Analysis of Volunteer  
Enlistments of Service and Cost Effectiveness  
Comparison of Service Incentive Programs.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Sep 73-30 Jun 74.  
OCT 74 315P Grissmer, D. W. ; Amey, D.  
M. ; Arms, R. L. ; Huck, D. F. ; Imperial, F.  
F. ;

REPT. NO. OAD-CR-66

CONTRACT: NDA903-74-C-0099

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Cost effectiveness, \*Recruiting,  
Cost analysis, Employment, Recruiters, Salaries,  
Volunteers, Time series analysis, Skills,  
Mathematical models, Education  
IDENTIFIERS: All volunteer military services,  
Bonuses, Unemployment

(U)

(U)

The primary purpose of this study was to determine  
the cost effectiveness of various enlistment programs  
in attracting additional volunteers to each  
Service. The analysis was also aimed at  
determining the effects of changes in youth  
unemployment rates, college entrance patterns and  
various Service manpower policies on volunteer  
enlistments in each Service as well as the inter-  
Service effects of one Service's programs on  
enlistments in other services. Three different  
methods of analysis have been used to determine  
program and policy effects. An econometric model  
of volunteer enlistments by state using explanatory  
variables including the number of recruiters, youth  
unemployment rate, military/civilian wage and college  
entrance rates was used with 1972 and 1973 enlistment  
data. A monthly econometric time series model was  
also used with volunteer data in the CY71-CY73  
time period with explanatory variables including  
military/civilian wage, number of recruiters, bonus  
variables, print media advertisements, unemployment  
rates and inter-Service variables. Finally,  
survey data were analyzed to estimate effectiveness  
of the bonus. (Author)

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AD-A001 033

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 015 5/3

UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF  
QUANTITATIVE BUSINESS ANALYSISCalculation of the Cost of Warranty Policies  
as a Function of Estimated Life  
Distributions.

(U)

DESCRIPTIVE NOTE: Technical progress rept.,  
OCT 74 27P Blischke, Wallace R. ;  
Scheuer, Ernest M. ;  
REPT. NO. USC-WP-1-10-1974  
CONTRACT: N00014-67-A-0269-0028  
PROJ: NR-042-323

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Consumers, \*Purchasing, Cost  
analysis, Life expectancy, Estimates, Distribution  
functions

(U)

IDENTIFIERS: \*Warranties, \*Consumer goods, \*Free  
replacement warranties, \*Pro rata warranties,  
Parameter estimation

(U)

Two types of warranties are analyzed. These are  
the free-replacement warranty, under which failed  
items are replaced free of charge until a specified  
total operating time has been achieved, and the pro-  
rata warranty, under which items which fail prior to  
a specified time are replaced at pro-rata cost to the  
buyer. Both the buyer's and seller's points of  
view are considered. The basis of the analysis is  
a comparison of warrantied and unwarrantied  
(otherwise identical) items with regard to long-  
run cost to the buyer and long-run profit to the  
seller.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 823 15/3 15/7 14/1

ARMY MATERIEL COMMAND REDSTONE ARSENAL ALA SAM-D  
PROJECTA New Methodology for Analytical Cost  
Effectiveness Comparisons of Air Defense  
Systems.

(U)

DESCRIPTIVE NOTE: Final rept.,  
OCT 74 32P McLaughlin, Thomas R. ;  
Souvenir, Stanley J. ; Churchill, Robert E. ;  
Meaders, Thomas J. ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Antiaircraft defense systems,  
\*Aircraft defense systems, \*Cost effectiveness,  
Air defense, Cost analysis, Air to air missiles,  
Surface to air missiles, Kill probabilities,  
Interception probabilities, Aerial warfare, Cost  
analysis

(U)

IDENTIFIERS: Scenarios

(U)

This paper presents a new methodology for  
analytical cost effectiveness comparisons for air  
defense systems. The scenario used for evaluation  
is a typical deployment of an Army in the Field.  
No specific geographical location or terrain need  
be specified. Air Defense systems are described  
by their Single Shot Engagement Kill  
Probability, PK, their surveillance and intercept  
footprints, their reaction times and shot-to-shot  
time constraints, their multiple simultaneous  
engagement, MSE, capability, their procurement  
cost, and their ownership and maintenance costs.  
On an equal total cost of ownership for a ten year  
basis, this methodology gives quick comparisons of  
the relative effectiveness of competitive systems.  
The methodology compares favorably with more  
detailed effectiveness comparisons using simulated  
wars such as IACDS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 567 5/1 14/1 15/5

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
97%-99% R and D Curves and 67%-99%  
Production Curves. Volume 11.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 605P Johnson, George V. ;  
REPT. NO. TROSCOM-TR-74-11-Vol-111

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 8, AD/A-000  
564.

DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 564 5/1 14/1 15/5

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
88%-90% R and D Curves and 67%-99%  
Production Curves. Volume 8.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 600P Johnson, George V. ;  
REPT. NO. TROSCOM-TR-74-11-Vol-8

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 6, AD/A-000 562  
and Volume 11, AD/A-000 567.

DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 562 5/1 14/1 15/5

ARMY TRCOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
82%-84% R and D Curves and 67%-99%  
Production Curves. Volume 6.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 601P Johnson, George V. ;  
REPT. NO. TRSCQM-TR-74-11-Vol-6

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
SUPPLEMENTARY NOTE: See also Volume 5, AD/A-000 561  
and Volume 8, AD/A-000 564.

DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

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(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 561 5/1 14/1 15/5

ARMY TRCOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
79%-81% R and D Curves and 67%-99%  
Production Curves. Volume 5.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 200P Johnson, George V. ;  
REPT. NO. TRSCQM-TR-74-11-Vol-5

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 4, AD/A-000 560  
and Volume 5, AD/A-000 562.

DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

(U)  
(U)

The Quaternary S-Curve was designed for cost-  
quantity adjustments necessary under these  
conditions: (1) when a cost estimate for a  
change in the production phase is needed and the  
production cost had there been no change is needed  
and (2) a relationship is needed to estimate R  
and D prototype costs, R and D production  
costs, full scale production preproduction model  
costs, and full scale production first unit costs.  
The estimates in (1) are particularly useful in  
negotiating changes to contracts. The  
relationships in (2) are useful in estimating  
Design To Unit Production Costs from cost-  
quantity data available in the R and D phase.  
(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 560 5/1 14/1 15/5

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quarternary S-Curves Based on  
76%-99% Production Curves. Volume 4.

(U)

DESCRIPTIVE NOTE: Final rept..

MAY 74 601P Johnson, George V. :  
REPT. NO. TROSCOM-TR-74-11-Vol-4

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
SUPPLEMENTARY NOTE: See also Volume 3, AD/A-000 559  
and Volume 5, AD/A-000 561.DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

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(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 559 5/1 14/1 15/5

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quarternary S-Curves Based on  
73%-75% R and D Curves and 67%-99%  
Production Curves. Volume 3.

(U)

DESCRIPTIVE NOTE: Final rept..

MAY 74 601P Johnson, George V. :  
REPT. NO. TROSCOM-TR-74-11-Vol-3

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
SUPPLEMENTARY NOTE: See also Volume 2, AD/A-000 558  
and Volume 4, AD/A-000 560.DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 558 5/1 14/1 15/5

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
70%-72% R and D Curves and 67%-99%  
Production Curves. Volume 2.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 601P Johnson, George V. ;  
REPT. NO. TROSCOM-TR-74-11-Vol-2

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
SUPPLEMENTARY NOTE: See also Volume 1, AD/A-000 557  
and Volume 3, AD/A-000 559.

DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

(U)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 557 5/1 14/1 15/5

ARMY TROOP SUPPORT COMMAND ST LOUIS MO

Tables of Quaternary S-Curves Based on  
67%-69% R and D Curves and 67%-99%  
Production Curves. Volume 1.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 601P Johnson, George V. ;  
REPT. NO. TROSCOM-TR-74-11-Vol-1

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
SUPPLEMENTARY NOTE: See also Volume 2, AD/A-000  
558.

DESCRIPTORS: \*Army operations, \*Production  
engineering, \*Cost analysis, \*Learning curves,  
Statistical data, Management information systems,  
Research management, Production control, Costs,  
Army budgets, Logistics

IDENTIFIERS: \*Cost quantity relationships

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As the result of the introduction of changes to an  
operating production system, there are three separate  
and distinct costs that must be considered: (1)  
the cost of the effect of the changes, (2) the  
cost of the changes, and (3) the basic  
production cost had the changes not occurred.  
Cochran developed an S-Curve/log-linear curve  
relationship for determining item (1) above.  
These tables can be used to estimate items (1),  
(2) and (3) above. The tables may also be  
used to estimate the R and D prototype costs, R  
and D production costs, the full scale production  
preproduction model costs, the full scale production  
first unit costs, the state-of-the-art, and/or the  
R and D and production learning rates  
(curves). (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 483 17/7 14/1

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIOThree Life Cycle Cost Models for Inertial  
Systems.

(U)

DESCRIPTIVE NOTE: Final rept.,  
APR 74 42P Adel, Robert E. ; Bonner,  
William J. ; Gibson, Keith J. ;  
REPT. NO. AGNC-74-011-2

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Inertial guidance, \*Cost analyses,  
\*Logistics planning, Avionics, Life cycles,  
Mathematical models, Maintenance, Acquisition,  
Trade off analyses, Air force research

(U)

IDENTIFIERS: \*Life cycle costing, Cost models,  
Logistics management, Omega navigation systems

(U)

The purpose of this report was to present three  
different Life Cycle Cost models for inertial  
systems to the membership of the Life Cycle  
Cost Task Group of the Joint Services  
Data Exchange for Inertial Systems for the  
purpose of familiarization prior to the April 1974  
meeting of that Group in Anaheim, California.  
The report describes three life cycle cost models  
that have been used in economic analysis of inertial  
navigation systems. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 399 1/3 14/1

GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE  
DIVWeapon System Costing Methodology for  
Aircraft Airframes and Basic Structures.  
Volume III. Cost Data Base.

(U)

DESCRIPTIVE NOTE: Interim rept. Jul 72-Nov 73.

JUN 74 156P Kenyon, R. E. ;

REPT. NO. CASD-AFS-73-001

CONTRACT: F33615-72-C-2083

PROJ: AF-1368

TASK: 136802

MONITOR: AF'DL 1R-73-129-Vol-3

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Dec 73. AD-  
783 639.

DESCRIPTORS: \*Aircraft, \*Airframes, \*Costs,  
Estimates, Cost analysis, Aerodynamic control  
surfaces, Composite structures, Manufacturing,  
Computer programming, Data bases

(U)

IDENTIFIERS: Design to cost, Cost estimating  
relationships

(U)

This volume presents the cost data used as the  
basis for developing the trade cost estimating  
technique for aerodynamic surfaces. Other data that  
has become available in the course of the study is  
also presented. Raw data and organized data are  
presented. An ultimate objective of the study with  
respect to the cost data base is to present back-up  
data for each individual CER, including both trade  
study and system costing relationships. The cost  
trend data that is included was produced under an  
amendment to the contract. Its intent was to  
provide a data base for cost estimate evaluation.  
(Author)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 923 129 14/1 15/5 9/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

A Case Study of the Usefulness of the Cost/  
Schedule Control System Criteria (C/  
SCSC).

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 74 136P Zbylut, Robert S. ;  
REPT. NO. GSW/SM/74S-15

UNCLASSIFIED REPORT

DESCRIPTORS: (\*Management planning and control,  
\*Military procurement), (\*Monitoring,  
Contracts), (\*Cost effectiveness, Department of  
Defense), Management, Planning, Costs,  
Research management, Human relations, Scheduling,  
Efficiency, Management engineering, Budgets,  
Operations research, Theses  
IDENTIFIERS: C/SCSC(Cost/schedule control system  
criteria), \*Cosi/schedule control system  
criteria

The Cost/Schedule Control System Criteria  
(C/SCSC) is the present standard method used by  
the department of Defense to monitor cost and  
progress of major acquisition programs. This  
research is a case study of one contractor and one  
such program. The objective is to determine the  
usefulness of C/SCSC to the management of the  
program. C/SCSC consists of a set of criteria  
which the internal management system of the  
contractor must meet. This research examined the  
general requirements for a system to comply with C/  
SCSC and examined the system of a single  
contractor. The three primary advantages from using  
C/SCSC are improved communications between  
managers in all organizations, improved visibility  
into the cost, progress, and management activities  
of the contractor, and forward planning of all  
required work. General limitations on usefulness of  
C/SCSC included problems concerning the meaning  
and timeliness of reports submitted, difficulty in  
analyzing the information, difficulty in determining  
schedule performance and difficulty in integrating  
the data with technical performance.

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AD- 923 129

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 920 774 5/9 5/3

OFFICE OF THE COMPTROLLER OF THE ARMY WASHINGTON D C  
DIRECTORATE OF CGST ANALYSIS

Military Occupational Specialty Training  
Cost Handbook (MOSB), Volume II  
Commissioned and Warrant Officers MOS's.

(U)

MAY 74 374P Carnahan, William P. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. AD-920  
773.

DESCRIPTORS: (\*Army training, \*Cost analysis),  
(\*Officer personnel, \*Costs), Statistical data,  
Army personnel, Job analysis, Specialists, Army  
budgets, Missions, Skills, Classification,  
Tables(Data), Handbooks, Army operations,  
Careers, Army procurement, Field army, Military  
reserves, Schools, Courses, Education)  
IDENTIFIERS: \*Warrant officers, Noncommissioned  
officers, Bonuses, \*MOS(Military Occupational  
Specialty), Military Occupational Specialty

(U)

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Volume I of this handbook presented rationale,  
methodology, and utilization statements as they  
referred to the enlisted MOS's. This section  
presents the same type of information for the  
Officer Corps and for Warrant Officers. The  
format remains the same and the uses remain  
unchanged. Certain unique features to these  
training costs are provided, including both  
similarities and differences in these MOS training  
costs.

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AD- 920 774

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 920 773 5/9 5/3

OFFICE OF THE COMPTROLLER OF THE ARMY WASHINGTON D C  
DIRECTORATE OF COST ANALYSIS

Military Occupational Specialty Training  
Cost Handbook (MOSB). Volume I. Enlisted  
MOS's.

MAY 74 577P Carnahan, William P. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-920  
774L.

DESCRIPTORS: (\*Army training, \*Cost analysis),  
(\*Enlisted personnel, \*Costs), Statistical data,  
Handbooks, Army personnel, Job analysis,  
Specialists, Army budgets, Missions, Skills,  
Classification, Tables(Data), Army Operations,  
Careers, Army procurement, Field army, Military  
reserves, Schools, Courses(Education)  
IDENTIFIERS: MOS(Military Occupational  
Specialty), Military Occupational Specialty,  
Bonuses

Cumulative training investment cost per man is  
shown for each Army Military Occupational  
Specialty (MOS). The investment data also  
include cumulative weeks of formal training. The  
costs shown identify the appropriation subtotals for  
Military Personnel, Army (MPA), Operation  
and Maintenance, Army (OMA) and Procurement.  
Costs are subidentified as variable, weighted  
average variable, fixed, and total. Cumulative  
subtotals are shown at each skill level in the  
assumed career progression that is reflected for each  
MOS. The costs reflect FY 1974 price escalation  
levels, and fixed and total costs per man are based  
on FY 1974 output.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 918 945 15/5 5/1 5/3

RCA GOVERNMENT AND COMMERCIAL SYSTEMS CAMDEN N J

Procedures and Methodology for Logistics  
Supportability Test and Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept. 11 Apr-31 Dec 73.

MAR 74 332P

REPT. NO. C1F/R-2

CONTRACT: F33600-73-C-0464

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Appendices. AD-918  
946L.

DESCRIPTORS: (\*Logistics support, Air Force  
operations), (\*Costs, Logistics support),  
Management planning and control, Military  
requirements, Maintainability, Reliability,  
Standardization, Test methods, Air Force  
procurement, Scheduling, Life cycles, Data  
acquisition, Trade off analyses, Command and control  
systems, Flow charting, Specifications, Weapons,  
Methodology

(U)

This document prescribed the procedures and  
methodology for logistics support test and  
evaluation. The purpose is to present procedures  
necessary to implement the AFLC independent Test  
and Evaluation requirements of AFR 80-14. The  
procedures and methodology presented cover planning,  
specifying, testing, evaluating, and reporting of  
logistics supportability and also includes measures/  
evaluation criteria for logistics support, logistics  
support cost, and operational reliability and  
maintainability.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 916 001 14/4 5/1

BOEING CO SEATTLE WASH

Life Cycle Cost/System Effectiveness  
Evaluation and Criteria.

(U)

JAN 74 71P Walker, G. A. ;  
REPT. NO. D180-17648-1

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*Life cycles, Costs), (\*Cost analysis, State of the art), (\*Cost effectiveness, Management planning and control), Reliability, Maintenance, Maintainability, Logistics support, Acquisition, Procurement, Operation, Computer programs, Data bases, Quality assurance, Planning, Manpower, Training, Research management, Aircraft, Guided missiles, Bibliographies

IDENTIFIERS: Design, Systems worth, \*Life cycle costs

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This document contains results of an independent research and development task on life cycle cost performed by Boeing Aerospace Company. This seven month study is Phase I of a planned continued effort and includes discussion on life cycle cost current state-of-the-art, a planned approach and recommendations on where emphasis should be placed to effectively perform cost analysis studies on new systems. Included is a bibliography of 160 documents relevant to life cycle cost, and an evaluation of 14 computer programs which provided the data base from which cost consideration elements and new criteria were developed. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 913 440 5/3 1/3

NOAH (J WATSON) ASSOCIATES INC ALEXANDRIA VA

Estimating Aircraft Acquisition Costs by  
Parametric Methods.

(U)

DESCRIPTIVE NOTE: Final rept..  
SEP 73 94P Noah, J. W. ; Daniels, J.  
M. ; Day, C. F. ; Eskew, H. L. ;  
REPT. NO. FR-103-USV  
CONTRACT: N00014-73-C-0330

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*NAVAL PROCUREMENT, NAVAL AIRCRAFT), (\*COSTS, NAVAL AIRCRAFT), REGRESSION ANALYSIS, CONTRACTS, MATERIALS, AIRFRAMES, AIRCRAFT ENGINES, MACHINE TOOLS, LABOR, GAS TURBINES, ELECTRONIC EQUIPMENT, AERODYNAMIC CHARACTERISTICS

IDENTIFIERS: AVIONICS, COST ESTIMATES, COST ANALYSIS

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This report presents summary data on airframe and engine characteristics and acquisition costs, and equations resulting from the application of multiple regression analysis. Cost and characteristic data are presented in summary form for 35 aircraft airframes and for 20 turbine engines. The cost data is divided between recurring and non-recurring to aid analysis. Equations that relate cost to physical performance and program characteristics are given with appropriate indicators of their 'goodness of fit'.

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 533 17/2 14/1

JOINT TACTICAL COMMUNICATIONS OFFICE FORT MONMOUTH N J

Cost Effectiveness Program Plan for Joint  
Tactical Communications, Volume III. Life  
Cycle Costing.

(U)

DESCRIPTIVE NOTE: Final rept.,  
AUG 74 135P Bellanca, Thomas J. ;  
REPT. NO. ITO-ORT-032-74-Vol-3

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Tactical communications. \*Cost  
effectiveness. Costs. Life cycles. Cost analysis.  
Trade off analyses. Economics

(U)

The purpose of Volume III is to provide the  
necessary guidelines and methodology for the  
preparation of Life Cycle Costs that are used  
in cost effectiveness analysis of tactical  
communication programs and in the optimization of  
communication system/equipment design. The Life  
Cycle Costing Volume contains the following  
information: The Basic structure of the LCC  
model; definitions of all the cost elements involved  
in the acquisition and ownership of communication  
equipment; general and specific TRI-TAC  
recommendations concerning certain ground rules and  
assumptions to be used in LCC analysis of TRI-  
TAC related programs; equations with appropriate  
cost factors to calculate operating and support  
costs; formats for the presentation of the cost data.  
In addition, general guidelines and information are  
presented on the treatment of learning curves,  
discounting and inflation in LCC analysis.  
(Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 425 17/1 15/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Parametric Cost Estimating with Applications  
to Sonar Technology.

(U)

DESCRIPTIVE NOTE: Technical rept..  
SEP 73 92P Miller, Bruce M. ;Sovereign.  
Michael G. ;  
REPT. NO. NPS-55Z073091A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Sonar equipment. \*Military  
procurement. \*Cost analysis. Mathematical  
prediction. Decision making. Statistical analysis.  
Learning curves  
IDENTIFIERS: \*Cost overruns. \*Cost estimates

(U)

(U)

The problem of cost overruns has been prevalent in  
the acquisition of weapon systems. Parametric cost  
analysis was instituted by the Department of  
Defense as a means of obtaining accurate initial  
cost estimates. The parametric approach uses cost  
estimating relationships (CER) in the development  
of cost predictions. An algorithm is presented for  
the development of parametric cost estimates obtained  
from CER's. Fictitious sonar data is used to  
provide an example of the application of the  
algorithm. Input and output CER's are developed  
and used in the construction of a parametric cost  
estimate for a proposed submarine sonar system. The  
problems of data collection, normalization, and  
aggregation are discussed. Numerous linear  
regression techniques are applied to the data to  
obtain the final cost models. Uncertainty in the  
final cost estimate due to the learning curve effect  
is discussed along with the uncertainty contained in  
the cost prediction interval. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 395 15/5

RAND CORP SANTA MONICA CALIF

Bias in Initial Cost Estimates: How  
Low Estimates Can Increase the Cost of  
Acquiring Weapon Systems.

(U)

JUL 74 29P Large, Joseph P. :  
REPT. NO. R-1467-PA/E

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Weapon systems, \*Military procurement,  
\*Cost analysis, Contracts, Decision making, Test  
methods

IDENTIFIERS: \*Cost estimates, Cost overruns

(U)

(U)

A small sample of weapon systems was investigated to determine whether a definite cause-and-effect relationship could be established between low initial cost estimates and subsequent cost increases. This report describes the result of that investigation and offers a few observations on how DoD might adapt defense procurement procedures to deal with problems arising from low estimates. The observations are intended to be suggestive, not definitive.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 367 6/12 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Comparative Analysis of Capital Equipment  
Budgeting Systems in Health Care  
Institutions.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 74 126P Talcott, Bruce Edwin :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Medical equipment, \*Hospitals,  
Budgets, Costs, Economics, Construction,  
Operation, Equipment, Theses

(U)

IDENTIFIERS: \*Health care costs, Hospital  
administration, Health facilities

(U)

The thesis presents a study of capital equipment investment budgeting procedures in the health care industry. It discusses capital equipment investment philosophy in general, and addresses a few of the contemporary problems and corresponding solutions contained in current health-care literature. The thesis also describes the specific capital equipment budgeting systems of three segments of the health-care industry: Navy hospitals, Veterans Administration hospitals, and non-federal hospitals. Three case studies in capital equipment budgeting - Naval Regional Medical Center, Oakland; Veterans Administration Hospital, Martinez; and Fairmont General Hospital, Alameda County - are presented to illustrate each of the three segments addressed.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD- 787 327 13/2 5/3

NATIONAL BUREAU OF STANDARDS WASHINGTON D C INST FOR  
APPLIED TECHNOLOGY

Cost Sharing for Shoreline Protection. (U)

DESCRIPTIVE NOTE: Contract rept..

AUG 74 73P Marshall, Harold E. ;  
REPT. NO. NBSIR-73-294  
MONITOR: IWR CR-74-7

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Shores, \*Environmental protection,  
\*Costs, Coastal regions, Economic models, Land  
use, Breakwaters, Structures, Engineering,  
Hurricanes, Beach erosion, Floods, Damage,  
Federal budgets, Offshore, Army research  
IDENTIFIERS: \*Shore protection, \*Coastal  
engineering, \*Cost sharing (U)

The nation's shorelines are being eroded by high winds and waves. Nonfederal interests have traditionally received federal help in the form of cost sharing for protective structures. The study provides the Army Corps of Engineers with an evaluation of alternative cost-sharing rules for shoreline protection with respect to efficiency, equity and administrative feasibility. Existing cost-sharing rules are described for hurricane, beach erosion, and emergency protection. The present cost-sharing system appears to induce local interests to choose costly techniques of protection, e.g., engineering rather than management techniques, and overbuilt projects in terms of the efficient scale. (Modified author abstract) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0W07

AD- 787 226 17/7 14/1

AEROSPACE GUIDANCE AND METEOROLOGY CENTER NEWARK AIR FORCE  
STATION CHIC

Proceedings of the Life Cycle Cost Task  
Group of the Joint Services Data Exchange  
for Inertial Systems Quarterly Meeting Held  
at Cambridge, Mass., on 19 August 1974. (U)

DESCRIPTIVE NOTE: Final rept.

AUG 74 40P  
REPT. NO. AGWC-74-028

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 13 Jun 74,  
AD-787 195.

DESCRIPTORS: \*Inertial systems, \*Life cycles,  
\*Cost analysis, \*Meetings, Inertial navigation,  
Costs, Acquisition, Maintenance, Management  
Planning and Control, Algorithms (U)  
IDENTIFIERS: Design to cost (U)

These proceedings describe the 4th quarterly meeting of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems. This meeting was held 19 Aug 74, in Cambridge, MA. The conference proceedings include a foreward by the Task Group Chairman, Russell B. Stauffer; educational presentations by Task Group members; and the proceedings of the newly formed Executive Board including plans for the 1974-1975 year. (Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 216 5/1

AIR FORCE INST OF T H WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

The Impact of Direct Cost Funding on Test Center Management.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
SEP 74 106P Peterson, Walter G. , Jr;  
REPT. NO. G&M/SM/74S-12

UNCLASSIFIED REPORT

DESCRIPTORS: \*Costs, \*Management planning and control, \*Test facilities, Errors, Deficiencies, Problem solving, Labor, Requirements, Organizations, Theses

IDENTIFIERS: \*Direct costs

(U)

(U)

Budgetary procedures cause reduction of test facility total obligation authority when a program is cancelled in the budget review. Users face loss of T and L funds on programs that slip. Adoption of a termination cost based on fixed costs should help. This study showed the possibility of inaccurate cost estimates due to poorly defined test requirements, use of inaccurate wage rates, ignoring cost growth, and poor organizational structure. Solution of related problems is discussed.

(Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 197 9/2 17/2 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

Criteria for Evaluating the Cost Effectiveness of Optical Character Recognition Equipment in Base Telecommunications Centers.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
AUG 74 96P Johnston, William B. :Abbott.  
Freeland K. , Jr;  
REPT. NO. SLSR-36-74B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Optical character recognition, \*Telecommunication circuits, \*Communications networks, \*Cost effectiveness, Communications central, Air Force, Message processing, Theses

(U)

The objective of this research was to develop and demonstrate a method for calculating the cost effectiveness of Optical Character Recognition Equipment (OCRE) in military communications centers. Six AFSC bases were studied and a break-even cost for OCRE was developed for four of the bases: Wright-Patterson, Tinker, Robins, and Hill. Elements of cost of the current system considered were personnel, teletype equipment, and paper. No survey was made of OCR devices on the market to see if a specific device would be cost effective; rather, prices at which OCR devices of various capabilities would become cost effective were developed. Single and multifont OCR capabilities in both 10 and 12-pitch were considered.

(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 195 17/7 14/1

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIO

Proceedings of the Life Cycle Cost Task  
Group of the Joint Services Data Exchange  
for Inertial Systems Quarterly Meeting Held  
at Kennebunkport, Maine, on 11-13 June  
1974.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUN 74 128P Meitzler, Thomas ;  
REPT. NO. AGMC-74-020

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 19 Aug 74,  
AD-787 220 and report dated 25 Apr 74, AD-785 390.

DESCRIPTORS: \*Inertial systems, \*Life cycles,  
\*Cost analysis, \*Meetings, Inertial navigation,  
Costs, Acquisition, Maintenance, Management  
planning and control, Algorithms  
IDENTIFIERS: Design to cost

(U)

(U)

These proceedings describe the third quarterly  
meeting of the Life Cycle Cost Task Group  
of the Joint Services Data Exchange for  
Inertial Systems. This meeting was held 11-13  
June, 1974, in Kennebunkport, Maine. The  
conference proceedings include an introduction by the  
Task Group Chairman, Russell M. Genet,  
educational presentations by several Task Group  
members, and summaries of three working groups.  
These three groups derived first-cut algorithms for  
the improved life cycle cost model in the areas of:  
(1) Research, Development, Test and  
Evaluation; (2) Acquisition; (3)  
Operation and Maintenance. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 188 15/5 1/3

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIO

Avionics Cost Reduction Through Improved  
Tests.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 8P Genet, Russell M. ;  
REPT. NO. AGMC-74-024

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Avionics, \*Maintenance, Test  
methods, Costs, Reduction, Economics, Inertial  
systems, Gyroscopes, Repair

(U)

Although cost has always been a consideration in  
the selection and use of tests for the repair of  
avionics, the present widespread use of very  
expensive avionics has necessitated refinements in  
testing with the goal of reducing repair costs.  
The relationship between testing and repair costs  
is rather complex, and only recently has it come  
under close scrutiny. It is the purpose of this  
paper to examine the recent analytic work relating  
avionics testing to repair costs. This paper  
covers the most important aspects of this body of  
research on the relationship between avionics testing  
and repair costs with the hope that the reader will  
be able to apply this research to reducing the cost  
of repairing his own avionics. A summary and list  
of references is provided at the end of the paper.  
(Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 183 15/3 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

A Summary and Analysis of Selected Life Cycle Costing Techniques and Models.

(U)

DESCRIPTIVE NOTE: Master's thesis,

AUG 74 182P Dover, Lawrence E. ; Oswald,

Billie E. , Jr;

REPT. NO. SLSR-18-74B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Life cycles, \*Logistics planning, \*Bibliographies, Costs, Taxonomy, Reliability, Maintainability, Cost effectiveness, Accounting, Models, Estimates, Simulation, Theses

(U)

IDENTIFIERS: \*Life cycle costing, \*Cost models, \*Logistics management

(U)

Operational costs continue to recur throughout the life of a weapon system and normally represents the majority of life cycle costs. Presented are in 'Annotated Bibliography of Selected Life Cycle Costing Literature' and a 'Taxonomy of Selected Life Cycle Cost Models'. The Annotated Bibliography is sectionalized into six areas: Directives and Guides; General Philosophy and Methodology; Reliability and Maintainability; Cost-Effectiveness; Cost Models; and Case Studies and Technical Reports. The Taxonomy discusses six types of life cycle cost models including accounting, cost estimating relationship, simulation, failure-free warranty, reliability, and economic analysis models. One conclusion is that awareness of life cycle costing concepts results in better planning and decisionmaking. (Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 787 045 5/3 5/1

ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING CENTER

Engineering Economic Analysis of Alternatives Using Benefits as Criteria for Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept.,

MAR 74 93P Motichko, Michael C. ;

REPT. NO. USAMC-ITC-02-08-73-110

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Economics, \*Decision making, Substitutes, Costs, Benefits

(U)

IDENTIFIERS: Benefit cost analysis, Delphi technique, \*Economic analysis, \*Alternatives

(U)

This research develops an effective procedure for the engineering economic analysis of alternatives using their different or unequal benefits as the decision criteria. The procedure calls for the determination of three numerical values. The Relative Weights show the relative importance of the benefits. The Delphi Technique is used to obtain the assignments of the Relative Weights from a group of experts, and convert them to a general consensus of expert opinion. The Alternative Ratings are numerical values from 0.00 through 10.00, that reflect how well each alternative satisfies each benefit. (Modified author abstract)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 786 757 10/1 10/2

BDOZ-ALLEN AND HAMILTON INC BETHESDA MD

Alternative Strategies for Optimizing Energy Supply, Distribution, and Consumption Systems on Naval Bases. Volume II. Advanced Energy Conservation Strategies.

(U)

DESCRIPTIVE NOTE: Final rept. Nov 73-Jan 74.  
JAN 74 231P Consroe, T. ; Nicholas, J. ;  
Nichols, J. ; Wulfinghoff, D. ; Mateyka, J. ;  
CONTRACT: N62399-73-C-0029  
MONITOR: CEL CR-74.007

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-777 471.  
DESCRIPTORS: \*Energy management, \*Naval shore facilities, Solar heating, Fuel cells, Transportation, Rocket engines, Technology, Cost effectiveness, Energy conservation, Cost analysis, Benefits, Thermionic converters, Solar collectors  
IDENTIFIERS: Cost benefit analysis, Electric power generation, Wind power, Solar air conditioning, Photovoltaic cells

(U)

(U)

The report describes five advanced strategies for optimizing energy supply, distribution, and consumption systems on naval bases: (1) Solar energy applications; (2) automated building control and monitoring systems; (3) electrochemical sources--fuel cells; (4) advanced transportation technology; and (5) total energy systems. For each advanced strategy, the report contains a technology assessment, a discussion of applicability to the Navy, a discussion of costs and benefits, and recommendations for Navy implementation. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 786 652 5/9 14/1

RAND CORP SANTA MONICA CALIF

Cost and Efficiency in Military Specialty Training.

(U)

JAN 74 34P Gay, Robert M. ; Nelson, Gary R. ;  
REPT. NO. P-5160

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented to the Annual Department of Defense Cost Research Symposium (8th), Warrenton, Va., 7 Nov 73.

DESCRIPTORS: \*Military training, \*Air force personnel, \*Cost effectiveness, Manpower utilization, Specialists, Investments, Value, Aircraft maintenance, Attitudes (Psychology)

(U)

The paper focuses on the issue--specialty training for first-term enlisted personnel--and deals briefly with the relationship between this topic and other aspects of the efficient management of military specialties. The conceptual framework, or methodology, for evaluating specialty training which has been developed at Rand considers the costs of both formal and on-the-job training as well as the returns to training for first-term enlisted personnel. This methodology was pilot-tested using members of one Air Force specialty, and results of that study are described. In the pilot study, average costs and returns to training were estimated, and, in addition, estimates were made of the relationship between individual attributes and the cost of training.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZCM07

AD- 786 581 5/9

RAND CORP SANTA MONICA CALIF

Considering the Cost of DOD Personnel: A  
Look at Some Issues Requiring Further  
Analysis.

(U)

JAN 74 21P Beltramo, Michael N. ;  
REPT. NO. P-5166

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Department of Defense, \*Manpower,  
\*Costs, Personnel management, Civilian personnel,  
Military personnel, Substitutes, Reviews  
IDENTIFIERS: Civilianization

(U)

(U)

The paper considers the rising personnel cost of DOD and discusses the cost issues related to the substitution of civilians for military personnel. While most recent research has sought to define and accurately measure the costs of both military and civilian personnel, the author states that this should be only the initial point of departure and that any decision to proceed with civilianization should consider both trends which are external to but affect the issue together with the impact that a decision for civilianization might have upon the current relative costs of civilian personnel.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 786 551 14/1 5/1 15/5 13/2

ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN ILL

Computer-Based Specifications: Cost  
Analysis Study.

(U)

DESCRIPTIVE NOTE: Final rept..

AUG 74 18P Poskus, Uldis R. ;  
REPT. NO. CERL-TR-P-25  
PROJ: DA-4-A-0612121-A-891  
TASK: 4-A-0612121-A-89106

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Cost analysis, \*Data processing,  
\*Construction, \*Specifications, Magnetic tape,  
Typewriters, Personnel, Reviews, Computer  
applications, Optimization, Time studies,  
Benefits, Savings  
IDENTIFIERS: Army Corps of Engineers

(U)

(U)

The computer-based specifications cost analysis study measured the absolute and relative efficiency of three methods of specification preparation: conventional typewriter based, magnetic tape selectric typewriter (MTST) based, and computer based. The computer-based method employed a keyboard/printer terminal linked to a time-sharing computer, using a text-editing computer program. The test procedure involved a controlled, repetitive preparation of representative samples of six Corps of Engineers guide specifications. The results indicate: (1) the computer-based method costs are 55 percent of MTST method costs and 39 percent of conventional typewriter method costs; (2) MTST costs are 72 percent of typewriter costs. (Modified author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 786 502 15/5 19/1

ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING CENTER

Analysis of Overhead Cost for a Defined Cost Center in the Lake City Army Ammunition Plant Using Regression Analysis.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 74 73P Hurta, Nicholas W. ;  
REPT. NO. USAMC-ITC-02-08-73-107

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Military facilities, \*Costs, Army, Regression analysis's, Ammunition, Allocations, Computer applications

(U)

IDENTIFIERS: \*Indirect costs, Cost estimates

(U)

Generally, the purpose of this research paper is twofold: (1) it develops a procedure by which overhead costs can be analyzed; (2) it applies regression analysis as the analytical means of determining the volume measurement that best correlates with overhead cost of a cost center using available production data. Specifically, this research paper investigates a defined cost center in the Lake City Army Ammunition Plant and: (1) determines that standard labor dollars is the best volume measurement for the cost center; (2) establishes two relationships between overhead cost and standard labor dollars that could be used in overhead cost estimation. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 786 501 14/2 7/4

ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING CENTER

Life Cycle Cost Study of Army Spectrometric Oil Program (ASOAP).

(U)

DESCRIPTIVE NOTE: Final rept.,  
APR 74 59P Yartin, Henry L. ;  
REPT. NO. USAMC-ITC-02-08-73-018

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Costs, \*Atomic spectroscopy, \*Oils, Models, Life cycles, Feasibility studies, Chemical analysis, Spectrometry

(U)

IDENTIFIERS: \*SOAP(Spectrometric Oil Analysis Program), \*Spectrometric oil analysis program

(U)

IAC ACCESSION NUMBER: NI-018478

IAC DOCUMENT TYPE: \*IAC -MICROFICHE--

The scope of this paper is to determine the present life cycle cost (LCC) of ASOAP (Army Spectrometric Oil Analysis Program) based on certain assumptions. A cost model capable of determining the life cycle cost of ASOAP for both the atomic absorption spectrometry and the atomic emission spectrometry is developed. Next, using this cost model, the feasibility of the oil analysis program is determined. Finally, interest is focused on the benefits that the program has brought about in the past, and future benefits will be projected. A brief history of the Army's intervention into oil analysis, LCC, and cost models is presented. A brief discussion on the two methods of analysis that the Army uses and some estimations of various costs that are associated with ASOAP are included. A general cost model and a cost model for ASOAP is developed with a discussion of the various components. (Modified author abstract)

(U)

IAC SUBJECT TERMS: N--(UISOAP, OILS, COSTS, MODELS, SPECTROMETRY, RESEARCH, FEASIBILITY, LITERATURE SURVEYS, HISTORY, SPECTROPHOTOMETRY, ATOMIC ABSORPTION, PREDICTIONS, COST EFFECTIVENESS;



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 953 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSThe Development of a Predictive Model for  
First Unit Costs Following Breaks in  
Production.

(U)

DESCRIPTIVE NOTE: Master's thesis.

AUG 74 115P Pichon, Allen A. , Jr.;

Richardson, Charles L. ;

REPT. NO. SLSR-15-74B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force procurement, \*Logistics  
planning, \*Costs, Spare parts, Production,  
Learning curves, Mathematical prediction, Standard  
deviation, Theses

IDENTIFIERS: \*Break in operations

(U)  
(U)

While the learning curve has received increased emphasis from private industry and the United States Air Force (USAF), an associated phenomenon, the break in production and its effect on follow-on first unit costs has received little formal attention. Since a major activity of USAF is the procurement of spares or parts after initial production of a weapon system is completed, the need for a model to predict first unit costs following a break in production is evident. This thesis developed such a model relative to a machine-shop environment. Through the use of a computer stepwise regression program, a model was determined to predict first unit direct costs after a break in production. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 950 5/3 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSA Study in the Application of the Cost  
Center Performance Summary to the Managerial  
Decision-Making Process.

(U)

DESCRIPTIVE NOTE: Master's thesis.

AUG 74 151P Ferris, Donald F. ; Smith,

Frederick V. ;

REPT. NO. SLSR-9-74B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Finance, \*Management, \*Decision  
making, Control, Resources, Costs,  
Questionnaires, ThesesIDENTIFIERS: \*Cost Center performance summary,  
\*Financial management(U)  
(U)

The Cost Center Performance Measurement System is a financial management system that was implemented to help managers make better use of Air Force resources by assisting them in making decisions. The heart of this financial management system is the Cost Center Performance Summary (CCPS). This study was conducted to determine the extent to which financial managers within the Strategic Air Command and the United States Air Force in Europe were utilizing the CCPS to influence their managerial decisions. (Modified author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 894 15/5 14/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

Studies in Support of the AMARC: Review of  
Cost Effectiveness Analysis. Volume 1.

(U)

MAR 74 42P

REPT. NO. LMI-74-14-Vol-1

CONTRACT: SD-321

PROJ: SD-321-21

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-785  
895.

DESCRIPTORS: \*Army equipment, \*Army procurement,  
\*Cost effectiveness, Management planning and  
control, Logistics, Maintenance, Personnel  
management, Manpower utilization, Systems  
engineering

(U)

As part of the Army Materiel Acquisition  
Review Committee (AMARC) effort, LMI was  
asked to review cost-effectiveness analyses (CEA)  
that were done in early stages of program development  
for quality and trends in quality. That was done  
for five disparate Army systems developments. It  
was found that CEA were not looked upon as  
continuing efforts during program development but  
rather as a one-shot exercise to support the concept  
development package. There were many different  
models employed at relatively low levels in the  
development organizations, with little consistency  
among forms of models or cost data used. Little  
improvement with time was found. (Modified author  
abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 876 9/2 5/1 15/5

ARMY COMPUTER SYSTEMS COMMAND FORT BELVOIR VA

Management Strategies for ADP  
Networking.

(U)

DESCRIPTIVE NOTE: Final rept..

74 170P Moore.K. Roger :

REPT. NO. USACSC-AT-74-02

PROJ: DA-SX-865803-MY-10

TASK: SX-865803-MY-1003

UNCLASSIFIED REPORT

DESCRIPTORS: \*Data processing terminals, \*Logistics  
planning, \*Army, Communications networks,  
Management information systems, Cost analysis,  
Economics, Time sharing

(U)

IDENTIFIERS: Network analysis(Management).

\*Computer networks, Benefit cost analysis

(U)

The purpose of this report is to identify the  
fundamental long range issues affecting the  
environment in which future Army ADP support must  
be provided and to discuss the emerging theories of  
ADP network management. This is one of several  
reports to be produced by the Multicommand  
Networks Project. Whereas other reports of  
this Project will make specific recommendations  
regarding Army installations, this report  
establishes a frame of reference broad enough to  
transcend all the alternatives to be considered.  
For the purposes of this report, the terms  
'computer networking,' 'ADP networking,' and 'ADP  
consolidation' are considered to be synonymous. In  
the fullest sense of networking, each organizational  
element in the network can be a producer, or a  
consumer of ADP services, or both. (Modified  
author abstract)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 849 12/1

KENTUCKY UNIV LEXINGTON DEPT OF STATISTICS

The Secretary Problem with Interview Cost.

(U)

JUL 74 25P Bartoszynski, R. ;  
 Govindarajulu, Z. ;  
 REPT. NO. TR-71, TR6-ONR  
 CONTRACT: N00014-73-A-0385-0001  
 PROJ: NR-042-295

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Decision theory, Probability, Costs, Permutations (U)  
 IDENTIFIERS: \*Stopping rules(Mathematics), \*Secretary problem, Ranking (U)

The paper deals with the so-called secretary problem, i.e. with the problem of optimal stopping of the random permutation  $(x_{sub 1}), \dots, x_{sub n}$  of numbers  $1, \dots, n$ , when the admissible information at each stage is only the relative value of the element observed last with respect to the preceding ones. (Modified author abstract) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD- 785 455 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

An Evaluation of the Replacement Criteria for Select Air Force Commercial General Purpose Motor Vehicles. (U)

DESCRIPTIVE NOTE: Master's thesis.

AUG 74 110P Reidy, John A. , Jr. ;  
 Schneider, Donald A. ;  
 REPT. NO. SLSR-3-47B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military vehicles, \*Logistics planning, \*Replacement theory, Replacement, Standards, Regression analysis, Correlation techniques, Aging(Materials), Life cycles, Costs, Air Force equipment (U)  
 IDENTIFIERS: Life cycle costing, \*Logistics management (U)

The thesis evaluates the effectiveness of the Air Force replacement criteria using the sedan, station wagon and pickup truck as sample vehicles. The thesis compares the Air Force vehicle replacement methods with programs used by various commercial activities. It also evaluates the effectiveness of the replacement criteria 'age' and 'accumulated mileage' through multiple regression analysis and statistical tests. Results indicate that accumulated mileage is a valid consideration for replacement, but that the age of a vehicle does not provide adequate justification for replacement of that vehicle. (Modified author abstract) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD- 785 438 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSA Cost Growth Model for Weapon System  
Development Programs.

(U)

DESCRIPTIVE NOTE: Master's thesis.

AUG 74 1230 Glover-William L. :Lerz.

John D. :

REPT. NO. SLSR-22-748

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement. \*Weapon systems.  
\*Costs. Logistics planning. Uncertainty. Risk.  
Statistical analysis. Mathematical models.  
Theses

IDENTIFIERS: Growth models

(U)

(U)

Much attention has been placed on cost growth in military weapon system acquisitions. The reasons for cost growth can be related to uncertainty relative to program costs, delivery dates and product reliability. A conceptual model has been developed to cope with the uncertainties in weapons acquisition programs. The model relates the concepts of entropy, information, uncertainty and costs, predicting final costs based on a measure of uncertainty, synonymous with risk in this study. The measure of uncertainty is entropy, or the lack of order in the information available to the program manager. The model expresses final costs as the ratio of initial cost estimates to program entropy. The authors develop and refine the model for application to weapon development programs.

(Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD- 785 392 17/7 15/5

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE  
STATION OHIOA Description of a Life Cycle Cost Model  
for Inertial Navigation Systems.

(U)

DESCRIPTIVE NOTE: Final rept..

JUN 74 50P Weitzler-Thomas D. :Genet.

Russell M. :

REPT. NO. AGWC-74-01411

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Inertial navigation. \*Avionics.  
\*Life cycles. Inventory analysis. Cost analysis.  
Logistics planning. Inventory control.  
Mathematical models. Computer programs.

FORTRAN

(U)

IDENTIFIERS: \*Logistics management. FORTRAN 4  
programming language

(U)

The purpose of this report is to document a mathematical model that has been used to evaluate the potential life cycle costs of inertial navigation systems. The model has been previously published; however, because of sensitive data, it had a limited distribution. This report includes definitions of all input and output parameters, explanations of algorithms for the model, a sample run using fictitious data and a program listing which includes a sensitivity study. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 391 17/7

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE STATION OHIO

Proceedings of Quarterly Meeting of Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems held at Clearwater, Florida on January 22-24, 1974.

(U)

DESCRIPTIVE NOTE: Final rept..  
JAN 74 245P Genet,Russell M. ;Hunt,Don E. ;  
REPT. NO. AGMC-74-01211

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 25 Apr 74, AD-785 390.  
DESCRIPTORS: \*Inertial systems. Life cycles. Costs. Meetings. Inertial navigation. Maintenance

(U)

The proceedings describe the first meeting of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems. The report contains copies of educational presentations on various subjects connected with Life Cycle Costing and with Maintenance Warranties. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 390 17/7

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE STATION OHIO

Proceedings of Quarterly Meeting of Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems Held at Anaheim, California on April 23-25, 1974.

(U)

DESCRIPTIVE NOTE: Final rept..  
APR 74 91P Meitzler,Thomas :  
REPT. NO. AGMC-74-01011

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 24 Jul 74, AD-785 391.  
DESCRIPTORS: \*Inertial systems. Life cycles. Costs. Meetings. Inertial navigation

(U)

The proceedings describe the second quarterly meeting of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems. The report includes an Introduction by Task Group Chairman, Russell Genet, and educational presentations on life cycle costing. Also included is a report on progress towards a 'standardized' government/contractor life cycle cost model for inertial systems. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 785 375 1/3 14/1

GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE  
DIVWeapon System Costing Methodology for  
Aircraft Airframes and Basic Structures.  
Volume IV. Estimating Techniques  
Handbook.

(U)

DESCRIPTIVE NOTE: Interim technical rept. Jul 72-Sep  
73.

APR 74 77P Kenyon, R. E. ;

CONTRACT: F33615-72-C-2083

PROJ: AF-1368

TASK: 136802

MONITOR: AFFDL TR-73-129-Vol-4

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1. Dated Dec 73.

AD-783 639.

DESCRIPTORS: \*Aircraft, \*Airframes, \*Cost  
analysis, \*Handbooks, Aerodynamic control surfaces,  
Fabrication, Costs, User needs, Computer  
programming

(U)

IDENTIFIERS: \*Cost estimating relationships

(U)

This report presents the interim results of a study aimed at extending cost estimating techniques developed and demonstrated under a previous contract. The previous study provided a trade study and a system study costing method for empennage elements. During the initial phase of the current study, these capabilities have been extended to include all aerodynamic surfaces: horizontal stabilizer, vertical stabilizer, canards treated as a stabilizer, and wings, including secondary structure. This volume provides a handbook as a guide to the trade study cost estimating technique. The function of the computer program is described. The program output format and the input data requirement and its organization are discussed and reference is provided to the cost estimating logic involved. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 785 313 17/7 5/1

MITRE CORP WCLEAN VA

An Advanced Air Traffic Management  
Concept Based on Extensions of the Upgraded  
Third Generation ATC System. System B:  
System Cost Analysis.

(U)

SEP 73 65P Sinha, A. N. ;

REPT. NO. MTR-6419-Ser-8

CONTRACT: DDT-FA70WA-2442

MONITOR: FAA-EM 73-10A-Ser-8

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Series 7. AD-785  
312.

DESCRIPTORS: \*Air traffic control systems, \*Cost  
analysis, \*Management planning and control,  
Estimates, Surveillance, Communication and radio  
systems, Navigation, Systems engineering, Radar  
equipment, Voice communications, Research  
management, Management information systems  
IDENTIFIERS: Advanced air traffic management system,  
Third generation systems, Fourth generation  
systems, Long range planning

(U)

(U)

The AATWS study was initiated to evaluate various concepts of fourth generation air traffic control in the 1995 era. The purpose was to aid in the long-range planning of research and development, and to identify areas that appear the most promising for early preparation for the fourth generation. The report discusses the system cost analysis of an extension of the upgraded third generation ATC system. Cost estimates are presented for the surveillance, communications, and navigation subsystems as well as for the control centers and controller staffing.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 141 5/9

COOPER AND CO STAMFORD CONN

The Development of a Methodology for  
Estimating the Cost of Air Force On-the-  
Job Training.

(U)

DESCRIPTIVE NOTE: Final rept..

JUL 74 69P Samers, Bernard V. ;Dunham,

Alan D. ;Nordhauser, Fred ;

CONTRACT: F1609-72-C-0048

PROJ: AF-2077

TASK: 207703

MONITOR: AFH7L TR-74-34

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Air Force training. \*Technicians.

\*Cost analysis, Schools, Assessment, Skills.

Education, Performance(Human), Reviews.

Methodology

IDENTIFIERS: \*On job training, Comparison

(U)

(U)

The Air Force uses a standardized costing methodology for resident technical training schools, but no comparable methodology has been available for computing the cost of on-the-job training (OJT). This study evaluates three alternative survey methodologies and a number of cost models for estimating the cost of OJT for airmen training in the Administrative Specialty from the 1-level (helper) to the 3-level (semi-skilled). The final costing methodology selected for use in the next phase of this research effort should be adaptable to other Air Force specialties and skill levels. The quality of OJT and ITS graduates is compared according to several criteria and the costs per graduate are compared. Other factors are also discussed. (Modified author abstract)

(U)

AD- 785 141

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365

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 784 883 14/2

ROYAL AIRCRAFT ESTABLISHMENT FARNBOROUGH (ENGLAND)

A Generalized Analysis of the Performance of  
a Variety of Drive Systems for High  
Reynolds Number, Transonic, Wind Tunnels.

(U)

DESCRIPTIVE NOTE: Technical rept..

FEB 74 100P Pugh, P. G. ;Evans, J. Y.

G. ;

REPT. NO. PAE-TR-73134

MONITOR: DRIC BR-39686

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Transonic wind tunnels. \*High energy.

\*Cost effectiveness. \*Reviews, Model tests.

Aircraft, Reynolds number, Energy storage.

Utilization, Great Britain, Systems engineering.

Thermodynamic cycles, Drives.

Performance(Engineering), Viscous flow.

Mathematical models, Experimental design

IDENTIFIERS: \*High Reynolds number tunnels

(U)

(U)

Many types of wind tunnels have been proposed for transonic testing of aircraft models at high Reynolds numbers. While some form of stored-energy system is needed in order to avoid exorbitant running costs, designs can vary considerably in the extent to which effective use is made of the mass of air stored in the circuit, in the energy input needed between runs, and in the quality of flow in the test section. Some of the most promising designs can be considered as variants of same thermodynamic cycle, and a generalised study has been made of their relative merits.

(U)

AD- 784 883

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 784 499 5/11

SMITHSONIAN INSTITUTION WASHINGTON D C

Cost Benefits of Navy Recreation:  
Summary of a Conference Held at the  
Smithsonian Institution on December 1973.

(U)

DESCRIPTIVE NOTE: Technical rept..

AUG 74 45P Sinikio.H. Wallace :Graham.

Rebecca W. ;

REPT. NO. TR-1

CONTRACT: N00014-67-A-1039-0006

PROJ: NR-170-032

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Meetings, \*Recreation, \*Naval  
personnel, \*Management information systems,  
Benefits, Costs, Problem solving, Policies,  
Planning, Naval research

IDENTIFIERS: Recommendations

(U)

(U)

A one-day conference was organized to serve two  
ends: to bring together information about the  
benefits of recreation and methods for assessing such  
information in terms of cost and other criteria; and  
to define related issues which would be clarified by  
further research. Participants included Navy  
recreation administrators and planners and a multi-  
disciplinary group of specialists from the behavioral  
sciences. The report summarizes the proceedings of  
the conference, which identified problems  
contributing to the difficulty of managing Navy  
recreation, suggested some arguments to support the  
case for recreation programs, and made action  
recommendations. (Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 784 444 5/9

RAND CORP SANTA MONICA CALIF

Manpower Cost Reduction in Electronics  
Maintenance: Framework and  
Recommendations.

(U)

DESCRIPTIVE NOTE: Interim rept..

JUL 74 76P Nelson,Gary R. :Gay,Robert

W. :Roll,Charles Robert, Jr:

REPT. NO. R-1483-ARPA

CONTRACT: D4HC15-73-C-0181. ARPA Order-169-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Electronic technicians, \*Maintenance  
personnel, \*Personnel management, \*Cost analysis,  
Manpower, Military equipment, Training, Weapon  
systems, Classification, Management planning and  
control, Time domain

(U)

IDENTIFIERS: Cost reduction, Recommendations

(U)

The costs of maintaining military electronics  
systems have increased sharply in recent years.  
Two major sources of this increase can be  
identified. First, electronics systems have become  
much more numerous and complex, and second, personnel  
costs have risen sharply--especially the cost of  
first-term enlisted personnel. The report looks at  
methods of reducing these costs. Recommendations  
are made in three weapon systems: maintenance  
training, job performance aids, and the personnel  
training system. The study distinguishes between  
short-term experiments or demonstrations that could  
be completed in six months to one year and longer-  
term projects.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 784 335 15/5 14/1

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM  
ANALYSIS DIV

A Quantitative Examination of Cost-Quantity  
Relationships, Competition During  
Reprocurement, and Military versus Commercial  
Prices for Three Types of Vehicles. Volume  
II.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAR 74 290P Zusman, Morris ; Asher, Norman  
; Metzler, Elliot ; Bennett, Debbie ; Gustaves,  
Selmer ;  
REPT. NO. S-429  
CONTRACT: DAHC15-73-C-0200  
MONITOR: IDA/HQ 73-15740

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-778  
612.

DESCRIPTORS: \*Military procurement, \*Industrial  
procurement, \*Cost analysis, Cargo vehicles,  
Military aircraft, Commercial aircraft, Electronic  
equipment

(U)

IDENTIFIERS: \*Cost comparison, Competition

(U)

The volume presents the results of the study which  
was divided into the following three interrelated  
subtasks: (1) An analytical and empirical  
examination of cost-quantity relationships with the  
objective of laying the framework for other parts of  
the study and attempting to identify factors other  
than cumulative units that might be incorporated in  
the progress curve; (2) an examination of  
competitive procurements with the objective of  
examining quantitatively the effect of competition on  
selling price; and (3) a comparison of prices  
paid for similar military and commercial equipment  
with the objective of testing quantitatively the  
hypothesis that commercial procurement practices are  
superior military procurement practices and that,  
as a result, commercial equipment costs less than  
similar military equipment. The appendices contain  
supporting data and analysis. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 784 124 15/5 5/3

OFFICE OF THE COMPTROLLER (AMC) ALEXANDRIA VA

Cost Estimating Relationships (CER)  
Compendium. Army Weapon and Equipment  
Systems.

(U)

DESCRIPTIVE NOTE: Technical publication.  
AUG 74 46P Frost, Ralph ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Army equipment  
\*Costs, Logistics planning, Documents,  
Operation, Army aircraft, Ammunition,  
Communication equipment, Guided missiles, Military  
vehicle

(U)

IDENTIFIERS: Cost estimates, \*Logistics  
management

(U)

A compendium of Cost Estimating Relationships  
(CER's) for use in estimating the cost of  
proposed army weapons and equipment. The CER's  
are presented by Commodity area, and for each CER  
the cost category (Research and Development,  
Investment, or Operating), subject, and title  
and date of the source document is stated.  
Portions of this document are not fully legible.

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 936 5/9

RAND CORP SANTA MONICA CALIF

Estimating the Cost of On-the-Job Training  
in Military Occupations: A Methodology and  
Pilot Study.

(U)

DESCRIPTIVE NOTE: Interim rept.,

APR 74 88P Gay, Robert M. ;

REPT. NO. R-1351-ARPA

CONTRACT: DAHC15-73-C-0181, ARPA Order-189-1

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Job training, \*Military personnel,  
Cost analysis, Air Force training, Maintenance  
personnel, Manpower, Costs, Efficiency

(U)

IDENTIFIERS: All volunteer military services,  
Productivity

(U)

The conversion to an all-volunteer military has greatly increased interest in the cost of training first-term enlisted personnel. This report (1) develops a method of estimating military on-the-job training costs and relationships between these costs and the personal attributes of trainees, and (2) evaluates the feasibility of this technique. The method of estimation is a straightforward application of modern human capital theory; investment in OJT is measured as the present value of the sum of positive differences between an individual's military pay and productivity over time. In a pilot study conducted at Norton Air Force Base with members of the largest Air Force specialty (Aircraft Maintenance Specialists), OJT costs were estimated to average \$6600 even though all trainees had attended an Air Force technical school costing about \$3200. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 932 15/5

LOGISTICS MANAGEMENT INST WASHINGTON D C

A Review of General Accounting Office  
Decisions on Life Cycle Costing.

(U)

JUN 74 87P

REPT. NO. LM-74-4

CONTRACT: SD-321

PROJ: SD-321-11

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Department of Defense, \*Government  
procurement, \*Costs, Life cycles, Reviews,  
Abstracts

(U)

IDENTIFIERS: \*Logistics management, \*Life cycle  
costing

(U)

The report reviews GAO decisions and reports through 1973 which impact on the application of Life Cycle Costing procedures on Government procurements. In addition to a discussion and overview, 35 specific decisions and reports are abstracted and reviewed. Cross-references and indexes by subject area are also provided.  
(Author)

(U)

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AD- 783 932

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 790 13/2 13/10

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

An Examination of Alternative Methods for  
Employing Booms to Contain Oil Spills in  
Navy Harbors.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JUN 74 102P Larson, Jerold Joseph ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Oil spills, \*Booms(Equipment),  
\*Decision making, Efficiency, Cost effectiveness,  
Costs, Performance(Engineering), Water  
pollution, Theses

(U)

IDENTIFIERS: \*Oil pollution containment,  
Comparison, Evaluation, Utility, Oil retention  
booms, Benefit cost analysis

(U)

A plan is formulated which enables a decision maker  
to determine the relative effectiveness of three  
methods for employing oil spill containment boom.  
The evaluation is based on a utility analysis of  
three defined methods for employing oil spill  
containment boom. A decision analysis technique is  
employed to determine the relative importance of  
parameters indicating the utility of each method for  
boom employment. The plan provides a means for  
balancing cost considerations against potential  
benefits. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 639 1/3 14/1

GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

Weapon System Costing Methodology for  
Aircraft Airframes and Basic Structures.  
Volume I. Cost Methods Research and  
Development.

(U)

DESCRIPTIVE NOTE: Technical rept. Jul 72-Sep 73.

DEC 73 233P Kenyon, R. E. ; Youns, J.

M. ;

CONTRACT: F33615-72-C-2063

PROJ: AF-1368

TASK: 136802

MONITOR: AFFDL TR-73-129-Vol-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft, \*Airframes, \*Costs,  
Estimates, Cost analysis, Aerodynamic control  
surfaces, Composite materials, Manufacturing,  
Computer programming

(U)

IDENTIFIERS: Design to cost, Cost estimating  
relationships

(U)

This report presents the interim results of a study  
aimed at extending cost estimating techniques  
developed and demonstrated under a previous contract.  
The previous study resulted in two separate  
estimating methods: a trade study and a system  
costing method. These methods provided two  
essential estimating capabilities: the capability  
of assessing the relative difference in the cost of  
the basic structures attributable to variations in  
type of construction and material in an iterative  
fashion to support tradeoff studies during the  
preliminary design process, and the capability of  
accurately estimating total airframe costs in  
manhours and materials for selected design while  
retaining sensitivity to type of material and  
construction. (Modified author abstract)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD- 783 629 5/9 12/2

RAND CORP SANTA MONICA CALIF

A Method for Least-Cost Scheduling of  
Personnel through Training Course Sequences.

(U)

JUN 74 33P Roach, Chris D. ;  
REPT. NO. R-1399-PR  
CONTRACT: F44620-63-C-0011

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: \*Personnel, \*Travel time, \*Cost  
analysis, \*Decision making, Education, Computer  
programming, Algorithms, Transportation, Integer  
programming

(U)

The report presents an algorithm to find the five  
least-cost sequences for scheduling military  
personnel through a series of courses where the costs  
incurred are transportation costs. The algorithm  
adapts the implicit enumeration approach of integer  
programming to this pipeline flow problem and will  
require at least  $(n - 2.8)n$  factorial fewer  
computations than total enumeration, where  $n$  is the  
number of courses. It can also be used to determine  
the least-cost sequences when mixed travel modes are  
involved. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 532 5/9

NAVAL SHIP SYSTEMS COMMAND WASHINGTON D C PERSONNEL AND  
TRAINING ANALYSIS OFFICERevised Manning Requirements and Personnel  
Cost Savings for the Local LDXX/NAVCOMPARS  
Systems.

(U)

DESCRIPTIVE NOTE: Rept. for Dec 73-May 74.  
JUN 74 88P Vecellio, Mark L. ;  
REPT. NO. 047C-74  
PROJ: X32-95

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Communication and radio systems,  
\*Manpower, Training, Automation, Personnel  
development, Cost analysis, Naval shore facilities,  
Job analysis, Requirements

(U)

The report updates the results of an earlier  
investigation of the manning and training  
requirements for operation of the Local Digital  
Message Exchange (LDVX) and Naval  
Communications Processing and Routing  
(NAVCOMPARS) systems. The information presented  
in this study is expected to be useful to Navy  
planners in developing changes to activity manpower  
authorizations, personnel acquisition and  
distribution plans, and in determining student  
training loads and requirements. An additional  
purpose of this personnel-oriented view of the  
automated communications systems is to examine and  
highlight areas wherein personnel savings can be  
made.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 487 15/5 9/5

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

Use of Computerized Support Modeling in  
Logistic Support Analysis.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUL 74 23P Colon,William: .. :  
Califapietra,Vincent G. :  
REPT. NO. ECOM-4228

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Logistics  
Research Conference held at George Washington  
Univ., Washington, D.C., 8-10 May 74.

DESCRIPTORS: \*Logistics support. \*Electronic  
equipment. \*Computerized simulation. Cost  
effectiveness. Maintainability. Inventory analysis.  
Life cycles. FORTRAN  
IDENTIFIERS: FORTRAN 4 programming language.  
Design to cost

(U)

(U)

During recent years there has been a growing  
concern within the Department of Defense  
(DoD) for the consequences of ignoring predicted  
logistics costs for any given system while it is  
still in design. In order to deal with the  
problems of ownership as well as acquisition of a  
system, one must be able to bridge the gap between  
the inherent characteristics of the design and  
environment in which the system will be operated and  
maintained. A valuable technique for identifying  
and evaluating the most cost effective options for  
management decision in this area is the performance  
of Logistic Support Analysis (LSA) utilizing  
computerized support modeling. A demonstration of  
how computerized support modeling (GEMM) can be  
applied in this manner, is presented by considering  
the design and development of an electronics system  
for Army use. Two examples are provided in order  
to illustrate typical LSA's during both the  
Advanced Development and Engineering  
Development phases. (Modified author  
abstract)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 416 19/5

BATTELLE COLUMBUS LABS OHIO

Production of Inconel 718 Mortar Tubes by  
Hydrostatic Extrusion.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUL 74 32P Douglas,J. Richard :Landis.  
Warren R. :Weyer,George E. :Byrner,Thomas G.  
:Florentino,Robert J. :  
CONTRACT: DAAF07-72-R-0082  
PROJ: PRON-M:-2-23069-02-M7-M7  
MONITOR: AVI CR-74027

UNCLASSIFIED REPORT

DESCRIPTORS: \*Gun barrels. Mortars. Extrusion.  
Hydrostatic pressure. Nickel alloys. Costs.  
Reduction. Economics  
IDENTIFIERS: Nickel alloy Inconel 718. Cost  
engineering

(U)

(U)

IAC ACCESSION NUMBER: MCIC-090630

IAC DOCUMENT TYPE: MCIC -HARD COPY--

Using subscale tubes, extrusion parameters were  
developed and then applied to full size 60mm tubes.  
It was shown that tubes can be satisfactorily  
produced at a reduced cost. Estimates were  
developed to mass produce hydrostatically extruded  
tubes. The processing parameters, dimensional  
results and economic analysis are presented in  
detail. (Modified author abstract)

(U)

IAC SUBJECT TERMS: M--(U)INCONEL 718. TUBES. HYDROSTATIC  
EXTRUSION. COSTS. ELEVATED TEMPERATURE. SERVICE LIFE.  
ULTIMATE TENSILE STRENGTH. TENSILE YIELD STRENGTH.  
DUCTILITY. FATIGUE PROPERTIES. TOUCHNESS PROPERTIES. GUN  
TUBES.:



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 325 5/1

RAND CORP SANTA MONICA CALIF

Cost, Benefit, and Risk -- Keys to  
Evaluation of Policy Alternatives.

(U)

MAR 74 18P Massey, H. G. ;  
REPT. NO. P-5197

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Cost-  
Effectiveness Symposium of the Washington Operations  
Research Council (3rd), Held at the National  
Bureau of Standards, Gaithersburg, Maryland on  
March 18-19, 1974.

DESCRIPTORS: \*Systems analysis, \*Cost analysis,  
Risk, Decision making, Uncertainty,  
Allocations

(U)

IDENTIFIERS: Resource allocation

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 320 1/3 15/5

RAND CORP SANTA MONICA CALIF

Problems in Avionics Life-Cycle Analysis.

(U)

DEC 73 21P Fiorello, Marco R. ;  
REPT. NO. P-5136

UNCLASSIFIED REPORT

DESCRIPTORS: \*Avionics, \*Life cycles, Weapon  
systems, Cost analysis, Procurement, Inventory  
analysis, Logistics support, Uncertainty  
IDENTIFIERS: Cost of ownership, Design to  
cost

(U)

(U)

There is a need to know a great deal more about  
Life-Cycle costs for weapon systems and their  
subsystems. Direct costs for development,  
procurement and operations have continued to spiral  
upward at an increasing rate. Of particular  
interest are the Life-Cycle costs of new  
generation avionics subsystems in contemporary weapon  
systems. These new avionics have high procurement  
costs, higher support costs and even appear to  
dominate the weapon system maintenance costs. This  
report is concerned with the difficulties that  
characterize contemporary Avionics Life-Cycle  
Analysis. The uncertainty associated with  
estimating avionics life-cycle costs is related to  
the life-cycle stages of weapon systems. (Modified  
author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 268 1/3 15/7

GOODYEAR AEROSPACE CORP AKRON OHIO

Slow Descent Recovery System Technology  
Study and Data Program.

(U)

DESCRIPTIVE NOTE: Final rept. Apr-Oct 73.

APR 74 290P Bloetscher, Frederick ;

REPT. NO. GER-16010

CONTRACT: F33657-73-C-0470

PROJ: AF-5970

TASK: 14

MONITOR: AFFDL TR-74-7

UNCLASSIFIED REPORT

DESCRIPTORS: \*Parachute descents. \*Cost effectiveness. \*Air drcs operations. Drogue parachutes. Rotors. Gliders. Balloons. Payload. Weight. Deployment. Optimization.

Performance(Engineering). Recovery

IDENTIFIERS: \*SLODS(SLOW Descent Systems).

\*Slow descent systems. Powered gliders. Drag devices. Tethered balloons

(U)

(U)

A six-month parametric study program was conducted of performance, weight and volume characteristics of typical configurations of both the slow descending and loiter type systems suitable for lightweight expendable payloads released from aircraft or rockets. Typical configurations investigated were drag devices, rotors, gliders, powered gliders, free and tethered balloons. Descent systems were studied for descent velocities of 2, 4 and 8 FPS while loiter systems were considered for times ranging to 600 minutes for a payload range of 0.1 to 50 pounds and altitudes up to 50,000 feet. Volume which is related to SLODS (Slow Descent Systems) weights was considered to be the most important parameter for the investigation. (Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 007 9/3 15/5

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND TECHNOLOGY DIV

Electronics-X: A Study of Military Electronics with Particular Reference to Cost and Reliability. Volume 1: Executive Conspectus.

(U)

DESCRIPTIVE NOTE: Final rept. Feb-Oct 73.

JAN 74 86P Gates, Howard P. , Jr. ;

Courany, Barry S. ; Deitchman, Seymour J. ;

Ronan, Thomas C. ; Weimer, C. David ;

REPT. NO. R-195

CONTRACT: DAH415-73-C-0200

UNCLASSIFIED REPORT

DESCRIPTORS: \*Electronics. Military applications. Costs. Reduction. Cost analysis. Reliability, (Electronics)

(U)

The report identifies the current DOD and industrial policies, procedures, and practices in development, production, and operational support that most significantly influence the cost and reliability of military electronics, and it recommends changes to reduce and control cost and to improve reliability. The report concentrates on five major, high-impact areas: (1) data collection and feedback, (2) requirements, (3) competition and management options, (4) reliability enhancement, and (5) maintenance training. Numerous other areas are discussed and detailed recommendations are made in each. (Author)

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AD- 783 007

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 782 569 6/5 5/3

BOEING COMPUTER SERVICES INC SEATTLE WASH THE CONSULTING  
DIVNaval Medical Care Study: Costs and  
Economic Efficiency.

(U)

DEC 73 113P Lamson, Robert D. ; Waggoner,  
John J. ; Minner, Dale E. ;  
CONTRACT: N00014-73-C-0341  
PROJ: NR-046-257

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-782 572.

DESCRIPTORS: \*Medical services, Manpower, Navy,  
Utilization, Cost analysis, Economics, Models,  
Patients, Regression analysis, Budgets, Military  
medicine, Efficiency

(U)

IDENTIFIERS: Health care delivery systems,  
CHAMPUS (Civilian Health and Medical Program of  
the Uniformed Services), Health maintenance  
organizations

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 782 477 9/2 5/1

CALIFORNIA UNIV LOS ANGELES GRADUATE SCHOOL OF  
MANAGEMENTGuidelines for the Acquisition of Software  
Packages.

(U)

DESCRIPTIVE NOTE: Technical rept..

JUL 74 21P L'ertz, Bennet P. :

REPT. NO. 1R-5

CONTRACT: N00014-69-A-0200-4053

PROJ: NR-049-345

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programming, \*Acquisition,  
Accounting, Finance, Time sharing, Decision  
making

(U)

IDENTIFIERS: Benefit cost analysis

(U)

Many decisions dealing with computer software  
systems involve the potential acquisition of packages  
for a specific or limited general purpose nature.  
Guidelines for acquisition are presented here which  
stress the implementation feasibility of such  
packages. This reflects the behavior that  
operational considerations not only impact the cost  
of a package but also are neglected in favor of  
traditional cost/benefit analysis. The use of the  
guidelines in the areas of operations management,  
computer systems management, and accounting are  
discussed. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 782 182 1/3 15/5

OFFICE OF THE ASSISTANT FOR STUDY SUPPORT KIRTLAND AFB N  
MEXModels and Methodology for Life Cycle Cost  
and Test and Evaluation Analysis. (U)

DESCRIPTIVE NOTE: Final rept.,  
JUL 73 161P Anderson, Richard H. ; Dixon,  
Thomas E. ; Couch, Robert F. , Jr. ; Newhart,  
William H. , Jr.  
REPT. NO. OAS-TR-73-6

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes AD-913 307.

DESCRIPTORS: \*Avionics, \*Life cycles, \*Costs,  
Logistics support, Reliability, Attack bombers,  
Survival(General), Kill probabilities.  
Computer programs (U)

IDENTIFIERS: MCSP computer program, DSPC Computer  
program, A-7 aircraft, A-7D aircraft (U)

This report documents various models and  
methodology which were developed during the course of  
some analytical studies on life cycle cost and test  
and evaluation. These studies were conducted by the  
Office of the Assistant for Study Support  
(OAS) at the request of DCS/Development  
Plans, Headquarters AFSC. The objectives of  
the study were to: Investigate the present  
methods of subsystem reliability specification and  
identify limitations associated with these methods;  
investigate new and innovative techniques for  
subsystem reliability management and identify  
benefits to be derived in terms of higher  
performance/lower costs; and, develop models and  
methodology applicable to life cycle cost and test  
and evaluation analyses. (Modified author  
abstract) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 781 947 1/3 14/1

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO SYSTEMS ANALYSIS  
OFFICECost-Effectiveness Model I. Prototype  
Selection and Trade-Off Analyses. (U)

MAY 74 22P El-Sabban, M. Zaki :  
REPT. NO. AVSAV-D-74-14  
MONITOR: USAFVSCOM TR-74-23

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Helicopters, \*Cost effectiveness,  
Performance, Reliability, Survival(General),  
Military procurement, Mathematical models (U)

The report presents a methodology that would guide  
a Product/Project Manager in making an informed  
selection from among several single prototype  
aircraft, based upon cost and effectiveness  
considerations. Measures of effectiveness are  
defined and a cost-effectiveness index  
(effectiveness per dollar) is determined and  
recommended as a basis for selection. A numerical  
example is presented, demonstrating the application  
of this model. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20407

AD- 781 857 9/5 17/7

PHILCO-FORD CORP WILLOW GROVE PA COMMUNICATION SYSTEMS  
DIVFederal Aviation Administration Printed  
Circuit Board Analysis-Cost Vs. Benefit  
Study.

(U)

DESCRIPTIVE NOTE: Final rept..

DEC 73 105P Ginsberg, Gerald L. :

CONTRACT: DOT-FA72W-3000

MONITOR: FAA-RO, GIDEP 74-111, E066-0621

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Printed circuits, Cost analysis, Air  
traffic control systems, Cost effectiveness,  
Standards, Trade off analyses, Costs, Life  
cycles

(U)

IDENTIFIERS: NTISDOT, \*Printed circuit boards

(U)

In arriving at a printed circuit board standard, the factors to be included in the standard must be analyzed. This report defines the trade-offs associated with the item considered for inclusion in the printed circuit board standard. Discussed are the specific details that could be standardized to provide a specification which would ensure that resultant equipments reflect minimized Life Cycle Cost. The areas covered include the types of equipment and systems procured by the FAA; state-of-the-art printed circuit board complexity and potential developments; board size; types of connectors; thermal cooling considerations; backplane wiring systems; testing interface; repair considerations; logistics and reliability.

(Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20407

AD- 781 717 17/2 5/1

CALIFORNIA UNIV LOS ANGELES GRADUATE SCHOOL OF  
MANAGEMENTGeneralized Cost/Performance Trade-Off  
Analysis.

(U)

74 12P Lientz, Bennet P. :

CONTRACT: N00014-69-A-0200-4033

PROJ: NR-049-345

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Communications networks, Decision  
making, Costs, Performance (Engineering),  
Topology, Pattern recognition, Theorems

(U)

Cost/performance trade-offs are considered in a generalized framework with application to communication networks involving computation. Techniques of pattern recognition for ill-defined structures are used to develop procedures for obtaining cost/effective network configurations. The methodology is contrasted with several existing methods. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 781 711 12/2 5/3

CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER

Cost and Production Functions - A Survey.

(U)

DESCRIPTIVE NOTE: Research rept..

APR 74 41P Shephard,Ronald W. ;

REPT. NO. JRC-74-11

CONTRACT: N00014-69-A-0200-1010

PROJ: NR-047-033, RR003-07

TASK: RR003-07-01

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-779 870.

DESCRIPTORS: \*Economics, Production, Costs,

Functions(Mathematics), Mathematical models

IDENTIFIERS: \*Production functions

(U)

(U)

Presented is a survey of recent developments in the theory of cost and production functions, contrasting with the notion of a production function as used in econometric studies. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 781 324 4/2

ENVIRONMENTAL PREDICTION RESEARCH FACILITY (NAVY) MONTEREY CALIF

Cost Effectiveness of Typhoon Forecast Improvements.

(U)

MAY 74 34P Brand,Samson ;Bielloch,Jack

W. ;

REPT. NO. ENVPREDRSCHF-tech paper-8-74

PROJ: WF52-551-713

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Typhoon.s. \*weather forecasting, Cost effectiveness, Storms, Decision making.

Evacuation, Tracking, Military facilities.

Pacific Ocean

(U)

(U)

IDENTIFIERS: North Pacific Ocean

Tropical cyclone forecast improvements in the western North Pacific are examined in terms of Department of Defense decision making (evacuation, sortie, preparedness, etc.). The improved decisions are then related directly to Department of Defense potential cost saving. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 781 132 1/3 17/7 19/5 15/5

GENERAL RESEARCH CORP SANTA BARBARA CALIF SCIENCE AND TECHNOLOGY DIV

Cost Analysis of Avionics Equipment. (U)

DESCRIPTIVE NOTE: Final rept. 16 Apr 73-1 Mar 74.  
 FEB 74 133P Dodson, E. N.; Kornish, S.  
 F.; Liebermann, R. R.; Waller, W. E.;  
 REPT. NO. GRC-CR-1-419-Vol-1  
 CONTRACT: F33615-73-C-1205  
 MONITOR: AFAL TR-73-441-Vol-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Avionics. \*Cost analysis. Fire control radar. Doppler navigation. Doppler radar. Inertial navigation. Digital computers. Logistics support

IDENTIFIERS: Cost estimating relationships (U)

The report addresses the problem of predicting the development, production, and logistic support cost of avionics equipment well before a detailed description of its physical makeup is known. The approach was to derive parametric cost estimating relationships (CERs) for four types of avionics subsystems: fire control radars, inertial navigators, digital computers, and doppler navigation radars. These CERs are based on technical design variables familiar to the exploratory or advanced development design engineer. The development CERs incorporate an explicit measure of the development program's state-of-the-art advance. The logistic support CERs are functions primarily of equipment first unit cost or cumulative average cost. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 780 986 17/7

COLLINS RADIO CO CEDAR RAPIDS IOWA

River and Harbor Aid to Navigation System (RHANS) Phase 1-C: System Definition. Volume IV. Cost. (U)

DESCRIPTIVE NOTE: Final rept. Jul 72-Apr 73.  
 NOV 73 130P Frye, E.; McLaughlin, R.;  
 Dedich, J.; Bengayen, W.; Sellers, G.;  
 REPT. NO. 52. 0765206-00:81M-Vol-4  
 CONTRACT: DDT-CG-21411-A  
 PROJ: CG-7231.2.0

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3. AD-760 989 and Volume 5. AD-780 987.

DESCRIPTORS: \*Hyperbolic navigation. \*Navigational aids. Ships. Surface navigation. Radio beacons. Microwave equipment. All weather. Radio navigation. Radio receivers. Radio transmitters. Short range (Distance). Systems engineering. Costs. Position finding. Rivers. Harbors. Inland waterways. Automatic (U)

IDENTIFIERS: RHANS (River and Harbor Aid to Navigation Systems). River and harbor aid to navigation systems (U)

The report submits pricing for the Service and User Segments of the RHANS program. The pricing satisfies the Phase I requirements of the RHANS program and the guidelines established by the US Coast Guard. It is the intent to illustrate as much cost visibility as possible to enable mutual in-depth evaluation of the costs. Initial cost estimating was performed by the RHANS Program Engineering Staff. The estimating was accomplished primarily on a quantity one basis. Careful review was given to this estimate, as it was the basis for Manufacturing estimates in the higher quantities involved. The end product has Manufacturing build rates and variances applied. These equipments are quoted in terms of average man-hours and rates as this effort is a cost projection. (U)

AD- 780 986

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 780 908 14/4

POLYTECHNIC INST OF NEW YORK BROOKLYN DEPT OF ELECTRICAL  
ENGINEERING AND ELECTROPHYSICS

Redundant Spares Allocation to Reduce  
Reliability Costs-II.

(U)

APR 74 20P Shaw, Leonard :  
REPT. NO. PINY-EE/EP-74-010, PINY-EER-109  
CONTRACT: N00014-67-A-0438-0013  
PROJ: NR-042-301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Sep 73. AD-  
768 363.

DESCRIPTORS: \*Reliability(Electronics).  
\*Redundant components. \*Spare parts. Inventory  
control. Allocations. Metal oxide semiconductors.  
Integrated circuits. Modules(Electronics).  
Costs

(U)

IDENTIFIERS: Large scale integrated circuits

(U)

The problem considered here is the optimal  
selection of the inventory of spares for a system  
built from two kinds of modules, the larger of which  
can be connected so it performs the role of the  
smaller one. The optimal inventory is the least  
costly one which achieves a specified probability  
that the spares will not be exhausted over the design  
lifetime. For some costs and failure rates it is  
most economical to use the larger module for both  
roles, due to the resulting increase in flexibility  
in the deployment of a single type of spare module.  
Both analytical and simulation methods have been  
used to study this problem. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 780 636 21/5 15/5

RAND CORP SANTA MONICA CALIF

Relating Technology to Acquisition Costs.  
Aircraft Turbine Engines.

(U)

MAR 74 81P Nelson, J. R. ; Timson, F.  
S. :  
REPT. NO. R-1288-PR  
CONTRACT: F44620-73-C-0011

UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft engines. \*Logistics planning.  
Cost analysis. Procurement. Estimates.  
Mathematical models. Turbofan engines. Turbojet  
engines. Thrust. Fuel consumption

(U)

IDENTIFIERS: Cost models. Logistics  
management

(U)

The quantitative measure presented in the report is  
derived from a recent Rand study in which a  
technique was developed for assessing the date at  
which an aircraft turbine engine with a specified set  
of technical parameters should pass its 150-hr  
Model Qualification Test (MQT). The refined  
aircraft turbine engine TOA model is based on 26  
U.S. military turbojet and turbofan engines  
developed and produced during the past 30 years.  
The model predicts the man-rated 150-hr MQT date  
as a function of certain of the engine's performance  
and design parameters. The parameters include  
maximum thrust of the engine at sea-level static  
conditions, weight, specific fuel consumption at  
military thrust at sea-level static, turbine inlet  
temperature, and a pressure term (the product of  
flight envelope maximum dynamic pressure and the  
overall pressure ratio of the engine). (Modified  
author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 779 870 5/3 12/2

CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER

Economic Theoretical Structure of Cost-Benefit Analysis.

(U)

DESCRIPTIVE NOTE: Research rept.,

MAY 74 19P Shephard, Ronald W. :

REPT. NO. ORC-74-13

CONTRACT: N00014-69-A-C200-1010

PROJ: NR-047-033. RR003-07-01

UNCLASSIFIED REPORT

DESCRIPTORS: \*Economics. \*Costs. Production. Economic models

(U)

IDENTIFIERS: \*Production functions. Utility functions. \*Benefit cost analysis

(U)

For a general model of production structure, various indirect production functions are defined and used to construct cost-return (benefit) relationships. When an ordinal utility function is used for valuation of output vectors, a cardinalization of the values of this function is suggested in terms of the minimal cost of getting output vectors at least as preferred as those of the indifference class to which is associated an ordinal value of  $V(u)$ . (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 779 861 12/2 15/7

DECISIONS AND DESIGNS INC MCLEAN VA

Decision Theory Research.

(U)

DESCRIPTIVE NOTE: Technical progress rept. no. 3. 1 Sep 73-28 Feb 74.

MAY 74 76P Kelly, Clinton W. : III:

Peterson, Carenson R. : Brown, Rex V. : Barclay,

Scott :

CONTRACT: N00014-73-C-0149. ARPA Order-2271

PROJ: NR-197-023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-757 117.

DESCRIPTORS: \*Decision theory. \*Meetings. Probability. Uncertainty. Decision making.

Military intelligence. Threat evaluation

(U)

IDENTIFIERS: Resource allocation. Benefit cost analysis

(U)

A report is presented concerning research for improving human judgments of probabilities and utilities for decision making, and the application of decision theory to problems in resource allocation and policy analysis. Decision theoretic concepts are developed and procedures established for encoding uncertainties as probabilities and incorporating attitudes toward risk into utilities. An approach is developed for translating national level decision making information needs for strategic planning into requirements which have the likelihood of being satisfied under varying options of resource allocation. A methodology is developed for intelligence analyst use of credible interval assessments without the use of sophisticated computer programs. Using as a case study the recent Energy crisis, decision theory analysis is investigated as an appropriate methodology for developing optimum outcomes for various alternatives in national and international policy negotiations. The substance of recent activities for decision analysis application to problems of current and scientific intelligence is reported. Appendix I reports on three Decision Theory Workshops which were conducted in November 1973.

(Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 779 579 5/1 15/3

ARMY WAR COLL CARLISLE BARRACKS PA

Can Cost Analysis Improve Management. (U)

DESCRIPTIVE NOTE: Student essay.  
 DEC 73 28P Stelmachowicz, Peter J. ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Defense systems, \*Cost analysis,  
 \*Management, Reviews (U)

The essay establishes that defense management is in need of improvement, that although a variety of reasons can be found to explain this situation, cost estimates are a prime culprit. Costs are the common denominator which translated all aspects of a system, no matter how technical or complex, into understandable terms. The paper briefly sketches the dimensions of the problem and provides an insight into cost analysis. (Modified author abstract) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 779 359 15/3

ARMY WAR COLL CARLISLE BARRACKS PA

The 'Should Cost' Concept. (U)

DESCRIPTIVE NOTE: Student essay.  
 DEC 73 21P Horn, Clifton A. ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Department of Defense, \*Cost  
 analysis, Management (U)

In an effort to reduce cost growth and overruns on defense contracts, new approach to cost analysis has been developed and implemented by DOD agencies. The new approach, called the 'should cost concept', has been used by all the services with significant savings reported. Some members of congress, Senator William Proxmire in particular, have challenged these claims, suggesting that the costs of performing a should cost study outweigh potential savings. Five of the first studies conducted by the Army have been examined. Of these, two studies were analyzed in detail to determine their value in establishing realistic negotiation objectives, identifying short- and long-range management improvement programs and in achieving cost savings for the government. (Modified author abstract) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 778 836 9/2

ROME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y

Rome Air Development Center R and D  
Program in Computer Language Controls and  
Software Engineering Techniques.

(U)

APR 74 25P Thayer, Richard H. ;  
REPT. NO. RADC-TR-74-80

UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programming. \*Cost analysis.  
High level languages, Air Force research

(U)

In the procurement of any large scale automatic data processing system, software development costs the United States Air Force three to five times the cost of hardware. These software costs can be attributed to the sheer magnitude of the labor of coding, the extremely high cost of debugging and verifying programs, a low transferability of computer programs between machines and the high cost of maintaining programs which include the elimination of latent errors. Only through automation of software production can the Air Force hope to control software development. This paper looks at the software production cycle, the present problems associated with it and the USAF R and D program in the development of automated techniques for software production. A final challenge is offered on knotty software R and D problems, that, if solved, could further Computer Technology.

(Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 778 765 9/2 9/5

NORTH CAROLINA STATE UNIV RALEIGH DEPT OF ELECTRICAL  
ENGINEERING

Research Proposal for Minimal Cost  
Sequential Machines.

(U)

JAN 74 69P Staudhammer, John ;  
REPT. NO. Rept. no. 1  
CONTRACT: DA-ARO-D-31-124-72-G65

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Reprinted with corrections report dated Jan 73.

DESCRIPTORS: \*Gates(Circuits). \*Logic circuits.  
Memory devices. Computations. Algorithms.  
Costs

(U)

IDENTIFIERS: \*Asynchronous sequential circuits.  
Flip flops. \*Sequential machines. Logic design

(U)

The state assignment problem for minimal logic required for a general synchronous machine is conceded to be a computationally intractable problem. However research conducted here over the last 18 months indicates that a realistic lower limit may be found on the logic required and that the procedures used to calculate this limit may be taken as a basis for guiding the state assignment such that a circuit approaching this limit may be obtained. Furthermore, the procedure may be used to decide on the kind of memory element to be used. It is proposed to extend these preliminary results to asynchronous machines, to incompletely specified machines, and to include output considerations. Further it is proposed to consolidate these findings in a set of algorithms which give an acceptably good state assignment for arbitrary, nontrivial machines. (Modified author abstract)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 778 634 5/3

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Cost of Living Adjustment for Military Personnel.

(U)

DESCRIPTIVE NOTE: Master's thesis.

MAR 74 87P Miletich, Cristobal S. ;  
Chien, Jen Ter ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military personnel,  
\*Indexes(Ratios), Costs, Consumers, Economic  
models, Finance, Food, Housing(Dwellings),  
Medical services, Clothing, Purchasing, Civilian  
personnel, Theses

IDENTIFIERS: \*Consumer price indexes, \*Cost of  
living

(U)

(U)

The study presents an analysis of the differences in the cost of living between civilian and military families. An index analogous to the Consumer Price Index (CPI) is constructed for military personnel. In constructing this new index the authors discuss both the theoretical and empirical basis for the existing Consumer Price Indices. The authors obtain this modified CPI for the military (MCPI) using two approaches. First they construct a new index considering only the effect on the CPI of those commodities available either free or at reduced prices to military personnel. Second they construct a military counterpart of the CPI considering only the unique geographic distribution of the military personnel. The results suggest that the MCPI has risen less rapidly than the CPI during the period 1961-1970. (Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 778 612 15/5 14/1

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM  
ANALYSIS DIV

A Quantitative Examination of Cost-Quantity Relationships. Competition during Reprocurement, and Military versus Commercial Prices for Three Types of Vehicles. Volume 1. Executive Summary.

(U)

DESCRIPTIVE NOTE: Final rept..

MAR 74 59P Zusman, Morris ; Asher, Norman  
; Wetzler, Elliot ; Bennett, Debbie ; Gustaves..  
Selmer ;

REPT. NO. S-429

CONTRACT: DAHC15-73-C-6200

MONITOR: IDA/HQ 73-15739

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military procurement, \*Industrial  
procurement, \*Cost analysis, Cargo ships, Cargo  
aircraft, Production

(U)

IDENTIFIERS: \*Cost comparison, Competition

(U)

The report presents the results of the study which was divided into the following three interrelated subtasks: (1) An analytical and empirical examination of cost-quantity relationships with the objective of laying the framework for other parts of the study and attempting to identify factors other than cumulative units that might be incorporated in the progress curve; (2) an examination of competitive procurements with the objective of examining quantitatively the effect of competition on selling price; and (3) a comparison of prices paid for similar military and commercial equipment with the objective of testing quantitatively the hypothesis that commercial procurement practices are superior to military procurement practices and that, as a result, commercial equipment costs less than similar military equipment. (Modified author abstract)

(U)

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AD- 778 612

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 778 597 1/1 1/3

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
PARIS (FRANCE)

AGARD Highlights. March 1974.

(U)

MAR 74 31P

REPT. NO. AGARD-Highlights-74/1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO furnished.

DESCRIPTORS: \*Aeronautical engineering. \*Costs.  
\*Systems engineering, Aircraft, Air pollution,  
Technology, Wind tunnels, Reviews, Meetings

(U)

The issue takes up some of the problems related to economy in view of the steadily increasing costs of maintaining modern, credible defense forces. The economic implications relating to aircraft design optimization, considering the relevance of cost, are also treated. One presents some views on the particular problems posed by atmospheric pollution by aircraft, and why these issues should be of interest to all the military.

(U)

AD- 778 597

UNCLASSIFIED

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 895 1/3 20/1 21/5

DOUGLAS AIRCRAFT CO LONG BEACH CALIF

DC-9 Noise Retrofit Feasibility. Volume  
II. Upper Goal Noise. Performance and  
Cost Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept. Jan-Sep 73.

DEC 73 159P Whallon, H. D. :

REPT. NO. MDC-J4356

CONTRACT: DDT-FA72WA-3116

MONITOR: FAA-RD 73-124-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Nov 73. AD-776 127.

DESCRIPTORS: \*Passenger aircraft. \*Jet engine noise.  
\*Noise reduction. Jet engines. Jet engine  
nacelles. Experimental design. Exhaust nozzles.  
Modification. Cost analysis

(U)

IDENTIFIERS: DC-9 aircraft. \*Retrofit. JT9D-9  
engines

(U)

The work described in the report covers the work performed in Phase II of this program. This Upper Goal nacelle configuration study was directed toward noise reduction goals of 4, 4.5, and 10 EPNdB at the Federal Aviation Regulations (FAR) Part 36 sideline, takeoff, cutback, and approach measurement conditions, respectively. Exhaust system development tests were conducted on an engine static test stand to evaluate the Upper Goal exhaust system. Components of the Upper Goal nacelle were designed and fabricated. The components were ground static tested for effect on engine performance and noise. The initial daisy-with-ejector configuration showed good acoustical results but with unacceptable performance losses, even after a number of modifications. An alternative configuration, using the same test hardware but adjusted to provide quieting by enlarging the nozzle area, essentially met acoustical and performance requirements. Static tests demonstrated predicted inflight noise reductions of 4.7, 4.0, 3.9, and 10.1 EPNdB at the sideline, takeoff, cutback, and approach measurement conditions, respectively, which approximate the FAA Upper Goal values.

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AD- 777 895

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 884 13/10

HYDRONAUTICS INC LAUREL MD

Concept Design and Cost Analysis of  
Restricted Draft Dry Bulk Carriers.

(U)

DESCRIPTIVE NOTE: Final technical rept. 22 Dec 72-21  
Jul 73.

NOV 73 174P Roseman, Donald P. ; Peters,

Geoffrey W. ; Lain, Horton W. ;

REPT. NO. TR-7330-1

CONTRACT: DACW73-73-C-0043

MONITOR: IWR 74-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Cargo ships, \*Ship hulls, Depth  
control, Harbors, Experimental design, Cost  
analysis, Cargo, Seakeeping

(U)

IDENTIFIERS: \*Restricted draft vessels, Beam to  
draft ratios

(U)

The development of restricted draft dry bulk  
carriers is recognized as a means for reducing  
transportation costs by permitting the operation of  
larger vessels out of existing ports. For three  
given drafts, a parametric computer design study of  
deadweight capacity and corresponding dimensions and  
form characteristics is carried out to determine  
maximum feasible deadweight, subject to assumed  
physical boundary conditions and economic  
considerations. Restricted draft ship  
characteristics selected for the study are developed  
into concept designs by conventional design methods.  
For resulting characteristics and costs are  
compared with conventional deep draft vessel  
characteristics and costs. Finally, technical  
problem areas associated with restricted draft ship  
designs are recognized and discussed.

(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 867 15/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The Applicability of 'Should Cost' to the  
Procurement Process.

(U)

DESCRIPTIVE NOTE: Master's thesis.

MAR 74 44P Haight, Richard William ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Military procurement,  
\*Costs, Logistics planning, Theses

(U)

IDENTIFIERS: Cost estimates, \*Should cost  
analysis

(U)

As major weapons systems become more complex, it  
becomes increasingly more difficult to accurately  
estimate the cost. Various costing techniques have  
been used in an attempt to accurately estimate the  
contract price of modern weapon systems with varying  
degrees of success. 'Should cost' analysis has  
become increasingly more important, in the eyes of  
some, as the best approach in a noncompetitive  
procurement situation. Currently, the Army, the  
Air Force, the Navy and GAO all conduct  
'should cost' studies using various approaches. In  
the paper, an attempt is made to gain the feelings of  
Defense contractors concerning the application of  
Government 'should cost' analysis. The author of  
the paper has made several recommendations, based  
upon data available, concerning the limitations of  
and the application of 'should cost' analysis.

(Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 864 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

A Methodology for Determining Investment Costs for Automated Storage Facilities.

(U)

DESCRIPTIVE NOTE: Master's thesis.

FEB 74 175P

Wilhelm, John P. ; Castle.

Richard S. ;

REPT. NO. GSA/SM/74-4

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Warehouses. \*Investments. \*Costs. Computerized simulation. Automation. Computer programs. Materials handling vehicles. Conveyors. Theses. Military research

(U)

IDENTIFIERS: Economic analysis

(U)

The study forms one input to a continuing investigation by DoD agencies into the economy of warehouse modernization. Specifically, this study focuses on the 1980 time frame and attempts to describe a methodology for predicting the investment costs for an automated DoD storage facility. The facility design used is the one found in the Phase II Final Report of Task Group 5-70, the group established in 1971 to study modernization of DoD storage facilities. The study presents a computer model which calculates investment costs for the building and the equipment of the proposed facility. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 623 12/2

UTAH UNIV SALT LAKE CITY

Optimum Adjustment Policy for a Product with Two Quality Characteristics.

(U)

73

SP

Kennedy, William J. . Jr. ;

Ghare, Prabhakar M. ;

## UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics Quarterly, v20 n4 p785-791 Dec 73.

SUPPLEMENTARY NOTE: Prepared in cooperation with Virginia Polytechnic Inst. and State University, Blacksburg, Va.

DESCRIPTORS: \*Costs. \*Statistical analysis. Probability density functions. Random variables. Adjusting

(U)

IDENTIFIERS: \*Prices. \*Products. \*Price adjustments

(U)

The authors consider the problem of determining an optimal adjustment policy when the price received for the product is a function of a stated quality measure. When this quality measure has a specified value, maximum price can be received. As the quality measure deviates from the specified value the price received drops progressively.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 572 1/3 14/1

LTV AEROSPACE CORP DALLAS TEX VOUGHT SYSTEMS DIV

Limit Criteria for Low Cost Airframe Concepts.

(U)

DESCRIPTIVE NOTE: Final rept. May-Nov 73.

OCT 73 108P Yarbrough, S. H. ; Cleaveland, W. B. ; Reingold, A. ;

REPT. NO. 2-57110/3R-3126

CONTRACT: F33615-73-C-3126

PROJ: AF-1368

TASK: 136801

MONITOR: AFFDL TR-73-140

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Airframes. \*Cost analysis. Structural members. Costs. Assessment. Machine shop practice. Value engineering. Jet fighters  
 IDENTIFIERS: A-7 aircraft, A-7D aircraft

(U)  
(U)

The report presents the results of a study program which evaluated the primary cost factors of selected airframe baseline components and alternate designs compatible with low cost concepts. The data from this study is compiled and presented in a ready reference format defined as the 'Limit Criteria.' Six A-7D aircraft components representing the characteristic stress types were selected as the baseline designs, then a minimum of two or more alternate designs were selected for each component. The baseline and alternates were analyzed and estimated on the basis of strength, stiffness, fracture toughness, weight and cost. Weight and cost of the design variations was plotted on a Cost/Weight/Value Diagram of each component for direct comparison of current design results. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 471 10/1

BOJZ-ALLEN AND HAMILTON INC BETHESDA MD

Alternative Strategies for Optimizing Energy Supply, Distribution, and Consumption Systems on Naval Bases. Volume 1: Near-Term Strategies.

(U)

DESCRIPTIVE NOTE: Final rept. May-Nov 73.

NOV 73 174P Consroe, T. ; Hatcher, S. ;

Nicholas, J. ; Mateyka, J. ; Shaw, R. ;

REPT. NO. 3A-9005-364

CONTRACT: N62399-73-C-0029

MONITOR: CEL CR-74.006

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Energy. \*Naval shore facilities. Utilization. Consumption. Energy conservation. Optimization. Cost effectiveness

(U)

The report describes an assessment of alternate strategies for optimizing energy supply, distribution, and consumption systems on naval bases. It contains the results of cost/benefit analyses of six near-term energy conservation strategies applicable to continental United States (CONUS) naval base. Implementation of these energy conservation strategies would not require research and development (R AND D) expenditures and would result in an energy savings roughly equivalent to 11 percent of current CONUS Navy energy use. (Modified author abstract)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 457 15/5

LOGISTICS MANAGEMENT INST WASHINGTON D C

The Contractual Implications of the Design-to-Cost Concept.

(U)

MAR 74 49P  
REPT. NO. LMI-74-1  
CONTRACT: SD-321  
PROJ: SD-321-E

UNCLASSIFIED REPORT

DESCRIPTORS: \*Military equipment, \*Logistics planning, Military procurement, Cost analysis, Contracts, Scheduling, Life cycles, Research management, Management, planning, and control  
IDENTIFIERS: \*Logistics management, \*Design to cost, \*Contract management

(U)

The report analyzes and presents conclusions and 12 recommendations on application of the design-to-cost concept from the contracting and procurement viewpoint. A primary conclusion was that design-to-cost does not require the use of any unique contracting techniques. A short chapter on the concept noted that design-to-cost is really a change in emphasis rather than a radical change in procurement philosophy. The relationship between design-to-cost and a number of topics were explored. The more significant relationships discussed included the statement of acquisition parameters, the type of contract to be used, the flexibility of contracting/program authority, life cycle costing, the imposition of military standards, the need for regulatory changes, the role of competition, the criteria for application, participation of the using commands and agencies, and contractor motivation.  
(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 456 15/5

LOGISTICS MANAGEMENT INST WASHINGTON D C

Criteria for Evaluating Weapon System Reliability, Availability and Costs.

(U)

MAR 74 110P  
REPT. NO. LMI-73-11  
CONTRACT: SD-321  
PROJ: SD-271-1P5

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weapon systems, \*Systems engineering, Logistics planning, Costs, Maintenance, Reliability, Life cycles, Mathematical models  
IDENTIFIERS: \*Logistics management

(U)

(U)

The purpose of this task was to determine the relationships among system and subsystem reliability, availability and life cycle costs. To accomplish this a model was constructed to determine the optimum reliability for each of the subsystems that comprise a system such that the total life cycle cost of the system, as affected by reliability, is minimized. Three principal submodels were constructed. These are: cost of system downtime (costs to achieve constant mission requirements) resulting from imperfect reliability, design, development, test, acquisition, and program management costs associated with achieving reliability; and maintenance and support costs affected by subsystem reliability. (Modified author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO ZOM07

AD- 777 441 4/2

NATIONAL WEATHER SERVICE SILVER SPRING MD SYSTEMS PLANS AND DESIGN DIV

Some Results from Applying a Cost-Effectiveness Model for Evaluating Aviation Weather Dissemination Techniques.

(U)

DESCRIPTIVE NOTE: Final rept. Apr 72-Dec 73.

DLC 73 77P Newhouse, Henry :

CONTRACT: DDT-FA72WA1-283

PROJ: FAA-132-422-062

MONITOR: FAI-RD 73-12B

UNCLASSIFIED REPORT

DESCRIPTORS: \*Weather communications, \*Aviation safety, \*Cost effectiveness, Weather forecasting, Flow charting

(U)

IDENTIFIERS: Performance evaluation

(U)

Some results were obtained from a cost-effectiveness model which was developed for evaluating the performance of various combinations of aviation weather dissemination techniques. Basic data on which the model operates consist of distributions of registered general aviation aircraft, air traffic activity and total flight services, FAA forecasts of growth in general aviation during the next decade, and the cost of various dissemination techniques and facilities. These data are used to generate estimates of demand in a 26 x 60 matrix of 1 degree squares covering the 48 states. Dissemination technique effectiveness values are arrived at largely through two factors--accessibility and usefulness--which were obtained via a Delphi approach. As part of the model's output, measures of system performance are given in terms of percentage of demand satisfied by the total system, each technique, and each portion of the flight profile. Computations give cost-per-demand served, cost of the total system plus overhead, and the cost of each technique in terms of capital, operating, and personnel costs. (Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 354 12/2

PENNSYLVANIA STATE UNIV UNIVERSITY PARK

The Development and Evaluation of a Cost-Based Composite Scheduling Rule.

(U)

74 16P Aggarwal, Sumer C. ;McCarl.

Bruce A. :

UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics Quarterly, v21 n1, p155-169 Mar 74.

DESCRIPTORS: \*Jobs, \*Scheduling, Costs, Inventory control, Experimental design, Analysis of variance, Tables(Data)

(U)

IDENTIFIERS: Rank order statistics, \*Job shop scheduling

(U)

A cost-based composite scheduling rule is developed and evaluated in comparison with three other well-researched scheduling rules--SP1, S/OPN, and SST. This cost rule permits the optimization of more than one performance measure at a time. The priority number that is used for scheduling operations through each machine group is based on four separate performance measures--(1) In-process inventory, (2) Facilities Utilization, (3) Lateness, and (4) Mean Setup Time. The factorial experimental design involved three factor levels of loads, three factor levels of cost, and three factor levels of mean time. Analysis of variance was performed on each of the five output measures to study the effects of each of the three factors on each individual rule. Rank-order comparisons between rules were also made; and, finally, general conclusions with regard to the effectiveness and flexibility of the Cost Rule were drawn. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 256 15/5 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO

The Affect of Wipics on the F4-B to N  
Conversion Program.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 73-Apr 74.

APR 74 47P Womer, Norman K. ;

REPT. NO. AFIT-TR-74-5

MONITOR: AU 5-1974-AFIT-ENS

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Jet fighters, \*Modification,  
\*Inventory control, \*Cost effectiveness, Cost  
analysis, Conversion, Air force equipment,  
Labor

(U)

IDENTIFIERS: \*WIPICS(Work In Process Inventory  
Control), \*Work in process inventory control,  
F-4B aircraft, F-4 aircraft, F-4N  
aircraft

(U)

The report provides the underlying theory and methods used to determine the affect of the Work in Process Inventory Control System (WIPICS) on the F4-B to N conversion program and the Naval Air Rework Facility, North Island, California. The report documents cost savings of 3.24% of the 'before' WIPIS. It also concludes that these cost savings are statistically significant at the 10% level. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 777 249 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSSuggested Methods for Implementation of Life  
Cycle Costing Techniques in the Procurement  
of Air Force General Purpose Commercial  
Vehicles.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JAN 74 86P Karsten, Ernst R. ;

McDaniel, Larry T. ;

REPT. NO. SLSI-9-74A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air force procurement, \*Vehicles,  
\*Life cycles, \*Costs, \*Logistics planning, Air  
force budgets, Maintenance, Theses

(U)

IDENTIFIERS: \*Life cycle costing

(U)

With decreasing Department of Defense budgets it is becoming more important to cut procurement cost and at the same time receive more for the money spent. One procurement method with this capability is Life Cycle Costing (LCC). Since vast sums of Air Force money are being spent each year on commercial vehicles, the LCC procurement method could become a viable alternative in their acquisition. The thesis is a study of two LCC techniques which could be applied in this acquisition. These methods are: Total Life Costing and Guaranteed Maintenance.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 247 15/5 1/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

A Cost-Benefit Analysis of Competitive  
Versus Sole Source Procurement of Aircraft  
Replenishment Spare Parts.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JAN 74 120P Olson, Alan E. ;Cunningham,

James A. ;Wilkins, Donald J. ;

REPT. NO. SLSR-21-74A

UNCLASSIFIED REPCR.

DESCRIPTORS: \*Aircraft equipment. \*Spare parts.

\*Al. Force procurement. \*Cost analysis. Savings.  
Analysis of variance. Theses

(U)

IDENTIFIERS: \*Benefit cost analysis. Competition.  
Prices

(U)

The objective of this research was to determine the  
effect of competition on the cost of aircraft  
replenishment spare parts. A conceptual model was  
presented which depicts the relationships between the  
various cost factors and the identifiable benefits of  
competition. It indicates that the net savings  
(loss) accompanying a shift from sole-source to  
competitive procurement is a function of gross  
savings (loss) in procurement dollars,  
procurement data costs, administrative costs, quality  
costs, and reliability costs. (Modified author  
abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 246 15/5

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICS

The Impact on Avionic Logistic Support  
Costs of False Maintenance Actions.

(U)

DESCRIPTIVE NOTE: Master's thesis.

JAN 74 86P

Pickard, George W. ;Waterman,

Quintin L. ;

REPT. NO. SLSR-23-74A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Logistics support. \*Avionics. \*Life  
tests. \*Costs. Failure. Maintenance. Regression  
analysis. Theses

(U)

The objectives of the research were (1) to  
describe, quantitatively, the impact of remove, test  
OK occurrences on base level logistic support costs  
and (2) to derive a model to predict these  
occurrences in terms of information available prior  
to system acquisition. Such a model will increase  
the accuracy of predicted logistic support costs for  
new or proposed systems. Limiting the scope of the  
research effort to base level, avionic, line  
replaceable unit maintenance, the authors selected a  
sample of 100 units from four aircraft currently in  
the AF inventory. The analysis reveals that test  
OK occurrences represent thirty percent of the  
suspected failures which are removed from the  
aircraft for repair. Twenty three percent of the  
manhours consumed to base level avionic maintenance  
were involved with a test OK unit. (Modified  
author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 130 13/10 15/3

TETRA TECH INC PASADENA CALIF

Study of Commercial Specifications for U.  
S. Navy Ships. (U)

DESCRIPTIVE NOTE: Final rept. Jan - Jun 73 on Phase  
1, SEP 73 203P Friedland, Nathan : (U)

REPT. NO. TT-TC-330

CONTRACT: N00014-73-C-0282

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval vessels, \*Government  
procurement, \*Specifications, Ship structural  
components, Electronic equipment, Steel,  
Shipbuilding, Cost analysis, Military  
requirements (U)

IDENTIFIERS: \*Benefit cost analysis, \*Design to  
cost (U)

Military and commercial specifications for  
shipbuilding steel, electronics, and ship subdivision  
have been compared. It was found that steels used  
in building merchant and combat ships are so similar  
that using a simplified set of integrated  
specifications would result in savings without  
appreciable reduction in strength and durability.  
Electronic equipment is so complex and varied that  
a similar approach is possible only in limited cases.  
Merchant marine subdivision standards are not  
suitable for naval use. A survey of all  
specifications used in the shipbuilding industry is  
desirable, with a view to establishing an integrated  
system of specifications suitable for military and  
commercial shipbuilding, to the mutual benefit of  
both sectors. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 12: 9/2

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH ARLINGTON VA

Proceedings of a Symposium on the High Cost  
of Software Held at the Naval Postgraduate  
School, Monterey, California, on September  
17-18, 1973. (U)

SEP 73 146P Goldberg, Jack :

UNCLASSIFIED REPORT

DESCRIPTORS: \*Computer programs, \*Costs,  
\*Meetings, Cost analysis, Production,  
Maintenance, Programming languages, Semantics (U)  
IDENTIFIERS: Design (U)

The Monterey Symposium on the High Cost of  
Software was held in September 1973, under the  
joint sponsorship of the Air Force Office of  
Scientific Research, the Army Research  
Office, and the Office of Naval Research.  
The objective of the symposium was to consider what  
research is needed to achieve a major reduction in  
software costs. Attendance was by invitation.  
The 97 attendees were organized in five workshops.  
The attendees were in strong agreement that direct  
and indirect software costs are unnecessarily high  
and are growing rapidly, that they constitute a  
serious limitation on the effectiveness of  
information-processing systems, and that the high  
cost is a consequence of the poor state-of-the-art of  
software design, production, and maintenance. There  
was a strong feeling of urgency that an energetic  
program of research be undertaken to advance the  
software art. The workshop discussions resulted in  
two sets of recommendations for a service-supported  
research program. (Modified author abstract) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 962 14/5 15/5

BEEMAN ENGINEERING ASSOCIATES INC BOONTON N J

Cost Benefits Study - Interim 16mm  
Microfilm Container and Reel Assembly.

(U)

DESCRIPTIVE NOTE: Interim rept. no. 5,  
MAR 74 90P Barton, H. A. ;  
CONTRACT: DAAA21-72-C-0515  
PROJ: DA-1-E-865803-M-726  
MONITOR: EDS/R 27U

UNCLASSIFIED REPORT

DESCRIPTORS: \*Microfilm, \*Containers, \*Cost  
analysis, \*Military procurement, Standardization,  
Inventory control, Data storage systems,  
Logistics, Military equipment, Surveys  
IDENTIFIERS: Benefit cost analysis

(U)

(U)

The report provides technical, operational and cost  
information relative to the procurement and use by  
the Government of the DoD Interim 16MM  
Microfilm Container and Reel Assembly.  
(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 939 21/5 15/5

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO

Major Item Special Study (MISS), AH-1G  
Gas Turbine Engine (T53-L-13B).

(U)

DESCRIPTIVE NOTE: Interim rept. 1 Jan 64-Jul 73.  
APR 74 23P  
REPT. NO. USAAVSCOM-TR-74-20

UNCLASSIFIED REPORT

DESCRIPTORS: \*Gas turbines, \*Helicopter engines,  
\*Logistics planning, Helicopters, Failure,  
Removal, Costs, Savings, Reliability  
IDENTIFIERS: T-53 engines, T-53-L-13B engines,  
AH-1G aircraft, H-1 aircraft, H-1G aircraft,  
\*Maintenance support planning, \*Maintenance  
management, 3-M system, \*Maintenance data  
collection, Huey Cobra

(U)

(U)

The report is designed to illustrate cost savings  
which would result from specific efforts in the areas  
of product improvement in quality and design. For  
the purpose of this study the cost savings produced  
in the area of product improvement are based on total  
elimination of a certain failure mode or modes.  
Appropriate modes are chosen because of their  
proportion of the total removals or their proportion  
in combination with other similar modes. These  
eliminated removals are then assumed to follow the  
distribution of the remaining removal modes. The  
actual cost savings are determined from the increase  
in the mean time to removal based on the new removal  
distributions.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 938 15/5

ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO

Guidelines for Preparing Economic Analysis  
for Army Aircraft Product Improvement  
Proposals.

(U)

DESCRIPTIVE NOTE: Final rept.,

MAR 74 23P Kassos, Anthony G. , Jr;  
REPT. NO. USAAVSCOM-TR-74-18

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army aircraft, \*Procurement, \*Cost  
analysis, Logistics, Cost effectiveness, Savings,  
Safety

(U)

IDENTIFIERS: Product improvement proposals

(U)

The report contains the text of a presentation  
given by the AVSCOM Cost Analysis Division on  
8 January 1974 to representatives from the various  
Directorates and Project Management Offices  
of AVSCOM. The purpose of the presentation was to  
provide AVSCOM Produce Improvement Proposal  
(PIP) proponents with guidelines in preparing the  
economic analysis required for FY 76 PIP  
submittals to AMC. This report addresses all  
available guidance as of this date. It is intended  
as an introduction to economic analysis for the PIP  
proponent who is unfamiliar with this discipline, but  
must prepare an analysis for his PIP submission.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 914 9/5 17/7

MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

Summary of Results of Antenna Design Cost  
Studies.

(U)

FEB 74 81P Bureau, J. C. ;  
REPT. NO. ATC-22  
CONTRACT: F19628-73-C-0002, DOT-FA72WA1-261  
PROJ: FAA-034-241-012  
MONITOR: FAA-RD 74-20

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Radar antennas, \*Air traffic control;  
systems, Radar beacons, Cost analysis, Cost  
effectiveness

(U)

IDENTIFIERS: Design, DABS(Discrete Address  
Beacon Systems), Discrete address beacon  
systems

(U)

The Discrete Address Beacon System (DABS)  
will provide the primary Air Traffic Control  
(ATC) surveillance information for the 1980-1990  
time period as it is introduced gradually as a  
replacement for the present Air Traffic Control  
Radar Beacon System (ATCRBS). This report  
discusses and summarizes the results of two DABS  
antenna system design-cost trade off studies  
performed by industrial concerns with substantial  
design, fabrication and field maintenance experience  
related to similar antenna systems now in the field.  
The data from these studies, was to be used to  
support other Lincoln Laboratory DABS studies  
leading to the definition and specification of a  
cost-effective system design.

(U)

AD- 776 938

UNCLASSIFIED

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AD- 776 914

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 808 5/2

SYRACUSE UNIV N Y

Data Management Systems for Structured  
Information Retrieval.

(U)

DESCRIPTIVE NOTE: Interim rept. Jul 71-Jul 72.  
FEB 74 48P Groner, Leo H.; Goel, Amrit

L. J.

REPT. NO. TR-72-3  
CONTRACT: F30602-72-C-0281  
PROJ: AF-5581  
TASK: 558102  
MONITOR: RADC TR-73-410

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Information retrieval, \*Data  
management, \*Cost effectiveness, Data processing,  
Information centers, User needs, Computer  
programming

(U)

The report describes some of the advantages and problems of using generalized data base management systems in information retrieval. A particular system, Data Manager -1, was studied to derive use and cost criteria. System costs were then obtained as a function of cost components and user demands for outputs. The methodology developed has been applied to a set of design problems relevant to GDMS/IR data base design. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 781 15/5 13/13

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSAn Economic Analysis of the Relevant Costs  
in Air Force Building Replacement.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JAN 74 104P Andrews, Melville M. . Jr.;  
Joiner, Jack L. ;  
REPT. NO. SLR-17-74A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air force facilities, \*Buildings,  
\*Cost analysis, \*Replacement, Costs,  
Maintenance, Construction, Mathematical analysis,  
Theses, Life expectancy  
IDENTIFIERS: Present worth, Depreciation

(U)

(U)

The thesis describes and analyzes the relevant costs in an Air Force building replacement consideration and illustrates, through the use of economic analysis, the effects of the described relevant costs on the replacement decision. A regression analysis is accomplished to illustrate a method of predicting maintenance expenditures. Building deterioration, obsolescence, and effectiveness are discussed in terms of their effects on maintenance costs and performance of the assigned function. An economic analysis of a hypothetical replacement consideration illustrates the sensitivity of the replacement decision to inclusion of the costs of obsolescence and reduced functional performance. Deferred maintenance is assessed in terms of its effect on functional performance. (Modified author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 539 15/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Auditing Cost-Effectiveness Analyses of Technological Changes.

(U)

DESCRIPTIVE NOTE: Final rept. Apr 72-Nov 73,  
NOV 73 105P Hartman, James K.; Womer, N. K.  
REPT. NO. NPS-55HH73121A

UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval aircraft, \*Maintenance, \*Cost effectiveness, Inventory control, Jobs, Production, Linear programming, Economic models, Statistical analysis

(U)

IDENTIFIERS: WIPICS (Work In Process Inventory Control System), Work in process inventory control system, Production functions, Naval Air Rework Facilities

(U)

A methodology is developed for auditing cost effectiveness analyses of major technological changes. The methodology is applied to the Work in Process Inventory Control System (WIPICS) recently implemented at NARF, North Island. The approach involves using data on NARF operations to estimate cost functions for each major program of the NARF both before and after the change. Cost comparisons using these models do not show a clear cost savings for the WIPICS system. (Author)

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AD- 776 539

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 140 17/7

MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

A Summary of the DABS (Discrete Address Beacon System) Transponder Design/Cost Studies.

(U)

DESCRIPTIVE NOTE: Project rept..  
MAR 74 44P Goblick, T. J.; Robeck, P. H.;  
REPT. NO. ATC-27  
CONTRACT: F15628-73-C-0002, DOT-FA72WA1-261  
MONITOR: FAA-RD 74-17

UNCLASSIFIED REPORT

DESCRIPTORS: \*Air traffic control systems, \*Transponders, Radar beacons, Cost analysis, Costs, Avionics

(U)

IDENTIFIERS: DABS (Discrete Address Beacon Systems), Discrete address beacon systems, ATCRBS (Air Traffic Control Radar Beacon Systems), Air traffic control radar beacon systems

(U)

One of the major concerns in the DABS development program has been the cost of the DABS transponder. In order to realistically assess the impact on transponder cost of the many alternative techniques and design choices being considered for DABS, four study contracts were awarded to avionics manufacturers to design and estimate costs of special circuitry (in Phase I) and complete transponders (in Phase II). The report summarizes the major results of these design/cost studies, which cover general aviation, military, and air carrier transponder designs (including a retrofit kit for the military APX-72 transponder). The transponder design/cost studies have had a marked influence on the design of the DABS signal and message formats. Since the cost studies were basically intended for comparing link options for DABS, the transponder specifications used in these cost studies do not correspond in detail to current DABS transponder specifications. Therefore the cost data contained in this report cannot be taken to be completely representative of the cost of the finally specified DABS transponders. (Author)

(U)

AD- 776 140



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 127 1/2

DOUGLAS AIRCRAFT CO LONG BEACH CALIF

DC-9 Noise Retrofit Feasibility. Volume  
I. Lower Goal Noise, Performance and  
Cost Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept. Jan 72-May 73,  
NOV 73 188P Dunbar, W. R. ;  
REPT. NO. MDC-J4355A  
CONTRACT: DOT-FA72WA-3116  
MONITOR: FAA-RD 73-124-1

UNCLASSIFIED REPORT

DESCRIPTORS: \*Aircraft noise, \*Noise reduction,  
\*Exhaust systems, \*Control systems, Engine  
nacelles, Test methods, Static tests, Flight  
testing, Performance(Engineering), Jet transport  
planes, Cost analysis, Thrust,  
Endurance(General)  
IDENTIFIERS: DC-9 aircraft, Evaluation

(U)  
(U)

The report covers the work performed in Phase 1,  
ground test and flight test, of the program.  
Exhaust system development tests were conducted on  
an engine static test stand to evaluate the lower  
goal exhaust system. Prototype components of the  
lower goal nacelle were designed and fabricated.  
The prototype components were tested for effect on  
engine performance and noise, and for effect on the  
compatibility with the J180 engine. A 100-hour  
durability test was performed, cycling the prototype  
nacelle through an accelerated simulated duty  
mission. A complete loads and stress analysis of  
the nacelle/airframe structure was performed. The  
inlet was tested in the icing tunnel for anti-icing  
bleed requirements and was tested for structural  
capability to withstand hail and bird impact. A  
20% thrust coefficient model was tested over a  
range of engine pressure ratios.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 776 028 9/2

RAND CORP SANTA MONICA CALIF

A Computer Centralization Cost Model for  
Conceptual Design.

(U)

SEP 73 59P Seals, Eugene ; Drezner,  
Stephen M. ;  
REPT. NO. F-1258-PR  
CONTRACT: F44620-73-C-0011

UNCLASSIFIED REPORT

DESCRIPTORS: \*Central processing units, \*Job  
analysis, \*Cost analysis Systems analysis, Air  
Force, Communication equipment, Input output  
devices, Memory devices, Computer programming,  
Maintenance, Manpower

(U)

The report describes a computer model developed to  
help investigate the costs of centralizing U.S.  
Air Force base-model computation workload. The  
model permits the analyst to estimate the cost of  
consolidating multiple existing or proposed  
facilities into fewer facilities. The report  
describes the model, the assumptions implicit in its  
world view, and the inputs required by the analyst.  
The limitations of the model and possible future  
modifications are also discussed.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 775 698 1/3 13/8 14/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
SYSTEMS AND LOGISTICSAn Analytical Approach to Optimizing  
Airframe Production Costs as a Function of  
Production Rate.

(U)

DESCRIPTIVE NOTE: Master's thesis.  
JAN 74 174P Fazio, Peter F. ; Russell,  
Stephen H. ;  
REPT. NO. SLSR-30-74A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Airframes. \*Production control.  
\*Costs. Industrial production. Government  
procurement. Aircraft industry. Scheduling.  
Optimization. Theses

(U)

The objective of the research is to analyze all  
elements of airframe production cost in terms of  
their sensitivity to production rate and to identify  
a methodology which will optimize rate of production  
with respect to total airframe costs for a fixed  
procurement quantity.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 775 628 17/2.1 22/2 15/7

PRC SYSTEMS SCIENCES CO MCLEAN VA

Development of Cost Estimating Relationships  
for FLEETSATCOM. Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. 15 Jun 73-14 Jan 74.  
JAN 74 177P Brussell, Eugene R. ; Meyer,  
Fernando ;  
REPT. NO. PRC-R-1800  
CONTRACT: N00014-73-C-0005

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Satellite communications.  
\*Communication networks. \*Cost analysis.  
Communication satellites. Data transmission systems.  
Data processing systems. Data links. Ground  
support equipment. Costs

(U)

IDENTIFIERS: \*Cost estimating relationships

(U)

Historical data relating to the cost and physical  
and performance characteristics of equipment  
comparable to the FLEETSATCOM system elements have  
been collected and analyzed. CER's that relate the  
cost to performance or physical parameters have been  
derived for the FLEETSATCOM system elements.  
Estimates of the cost uncertainty associated with  
each of the FLEETSATCOM system elements have been  
incorporated into a computer program with the  
resultant output a probability distribution of the  
costs of the total FLEETSATCOM system. Finally,  
throughout the report the CER's have been validated  
by applying them to the technical and physical  
parameters and for the planned quantities, as of  
September 1973, of the FLEETSATCOM system  
elements. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 775 472 20/14 9/5

GEORGIA INST OF TECH ATLANTA ENGINEERING EXPERIMENT  
STATIONStudy of Comparative Costs for Far-Field  
Antenna Patterns Determined by Near-Field  
Measurements and by Far-Field Measurements.

(U)

DESCRIPTIVE NOTE: Final rept. 15 Jan 73-31 Jan 74.  
JAN 74 76P Rodrigue, G. P.; Burns,

Charles P. ;

REPT. NO. GIT-A-1498

CONTRACT: DAAH01-73-C-0430

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Antenna radiation patterns, \*Phased  
arrays, Near field, Far field, Cost analysis

(U)

Antenna pattern measurement costs for both acceptance testing and production testing of a large phased array were determined for both near-field and far-field measurement techniques. Operating costs depend on the thoroughness to which the antenna is tested. Extremely large amounts of data can be generated very efficiently using the near-field technique. However, most test programs are limited by budget and time considerations to a relatively small volume of data. Since requirements for more data would always favor the near-field techniques, a limited set of measurements comparable to previous far-field measurement experience was used.

(Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 775 375 13/10 11/6

BOEING CO SEATTLE WASH NAVAL SYSTEMS DIV

Trade-Off Study for Materials and  
Fabrication Processes for Advanced High  
Performance Ship Applications. Volume II.  
Appendices.

(U)

DESCRIPTIVE NOTE: Final rept. 15 Jun 73-28 Feb 74.

FEB 74 253P Bosworth, Thomas J. ;

REPT. NO. D180-17941-1-Vol-2

CONTRACT: N00024-73-C-5506

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume I. AD-775 330.

DESCRIPTORS: \*Ships, Trade off analyses.

Materials, Fabrication, Hydrofoil craft, Surface  
effect ships, Air cushion vehicles, Aluminum alloys,  
Titanium alloys, Steel, Nickel alloys, Cost  
analysis, Costs

(U)

IDENTIFIERS: Manufacturing, High performance

(U)

IAC ACCESSION NUMBER: MCIC-089617

IAC DOCUMENT TYPE: MCIC -HARD COPY--

Contents: Candidate structural materials;  
Process ratings for materials; Cost analysis;  
Performance (design) analysis; Risk  
assessment; Shipyard capabilities; land. Annotated  
bibliography of selected references.

(U)

IAC SUBJECT TERMS: M--(U)5083, 5086, 5450, 6061, TI-6AL-  
4V, TI-6AL-2CB-1TA-1MO, HY-80, HY-130, HY-180, 9NI-4CO-  
0.20C, 22-13-5 STAINLESS, 15-5PH, 17-4 PH, INCONEL 625,  
INCONEL 718, EXTRUSIONS, PLATE, HEAT TREATING, MACHINING,  
JOINING, SPECIFICATIONS, NONDESTRUCTIVE TESTING, COSTS,  
DESIGN, CORROSION, PHYSICAL PROPERTIES, TENSILE PROPERTIES,  
FATIGUE, SHIPS.;



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 775 281 5/9 12/1 12/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A Survey of Methods of Teaching  
Mathematics.

(U)

DESCRIPTIVE NOTE: Final rept.,

DEC 73 33P Kovach, L. D. ;  
REPT. NO. NPS-53KV73121A

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Teaching methods, \*Mathematics,  
Costs, Teaching machines, Computer graphics,  
Visual aids, Tape recording, Magnetic tape,  
Training films

(U)

A number of nontraditional methods of teaching  
mathematics are studied. The methods are compared  
by listing their advantages, disadvantages and cost.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 775 233 15/5 5/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

Investigation of the Impact of Rent-Across-  
the-Board.

(U)

JAN 74 81P  
REPT. NO. LMI-74-7CONTRACT: SD-321  
PROJ: SD-321-14

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military facilities, \*Military  
equipment, \*Leasing, \*Industrial plants,  
Contracts, Costs, Logistics planning, Management  
planning and control

(U)

IDENTIFIERS: \*Rent across the board, Income,  
Benefit cost analysis, Sales, Taxes, Insurance

(U)

Under Rent-Across-the-Board rent would be  
collected for government-owned facilities based upon  
mere possession by contractors regardless of amount  
of use on either government or commercial products.  
The impact of rent-across-the-board on product  
costs was found to be less than four percent by two  
methods. One method was a case study of a  
contractor who had bought an Industrial Reserve  
Plant. The second method was an analysis of 16  
airframe manufacturing plants using overall cost and  
equipment ratios. The rental rates given in the  
Armed Services Procurement Regulation were  
examined and found to be too low and not comparable  
to commercial practice. The increase in  
administrative costs to adopt rent-across-the-board  
is analyzed. Finally, contractor comment on rent-  
across-the-board is presented and discussed.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 774 744 13/10 14/1

SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

Cost Considerations for Handling Data Buoys  
at Sea,

(U)

OCT 73 52P Pelouquin, R. A. ;

REPT. NO. SIO-Ref-73-33

CONTRACT: N00014-69-A-0200-6043

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by National  
Science Foundation, Washington, D.C. Report on  
North Pacific Experiment.DESCRIPTORS: \*Tenders(Vessels), \*Buoys, \*Cost  
analysis, Handling, Deployment, Ship personnel,  
Fuel consumption, Costs, Decision making

(U)

Plans for moving significant numbers of moored  
buoys must consider the costs of the servicing ship  
and the buoy handling system as well as the buoy  
costs. The selection of the ship which is to  
perform the deployment and servicing should be guided  
by objectively derived cost considerations.

(Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 774 740 9/2

CALIFORNIA UNIV LOS ANGELES GRADUATE SCHOOL OF  
MANAGEMENTComputer Network Usage-Cost-Benefit  
Analysis-I.

(U)

DESCRIPTIVE NOTE: Information systems working paper.

DEC 73 29P Lientz, Bennet P. ;

REPT. NO. Working Paper-7-74

CONTRACT: N00014-67-A-0269-0027

PROJ: NR-049-345

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Communications networks, \*Cost  
effectiveness, Computer programming  
IDENTIFIERS: \*Computer networks, Benefit cost  
analysis

(U)

(U)

With the establishment of several computation-  
communication networks several questions arise as to  
the cost-effectiveness of a network for a particular  
potential user. Analysis is necessary to determine  
which software systems can be established and used on  
a network rather than the internal computer of user's  
organization. The timings of transitions to the  
network must also be found. A methodology for  
cost/benefit analysis is presented. For multiple  
systems, an extended horizon and restricted  
resources, an integer programming method is  
developed. Approximations for planning and a  
discussion of stability are given. A numerical  
example is included. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 774 653 5/1 15/3

ASSISTANT SECRETARY OF DEFENSE (SYSTEMS ANALYSIS)  
WASHINGTON D C

Proceedings of the Annual Department of  
Defense Cost Research Symposium (8th)  
Held at Airlie, Va., 6-8 Nov 73.

NOV 73 500P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 13 Oct 72.  
AD-758 144.

DESCRIPTORS: \*Cost analysis, \*Department of  
Defense, \*Weapon systems, \*Symposia, Data  
acquisition, Management planning and control,  
Cooperation, Joint military activities,  
Information systems, Specifications, Economics,  
Uncertainty, Personnel, Distribution, Standards,  
Classification, Accounting, Methodology  
IDENTIFIERS: Objectives

(U)

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(U)

The document contains proceedings of the Eighth  
Department of Defense (DOD) Cost Research  
Symposium held in 1973 at Airlie, Virginia.  
The Cost Research Program was established by  
the DOD in 1966. The objectives are to  
Establish cost research goals DOD-wide, to avoid  
research gaps or duplication, to coordinate joint  
cost research efforts, to disseminate the results of  
research, and to plan the symposia.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 773 907 15/5

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

Maintainability Demonstration Cost Savings  
Analysis.

(U)

DESCRIPTIVE NOTE: Technical rept..  
NOV 73 280 Cox, Tony D. :  
REPT. NO. ECCM-4167

UNCLASSIFIED REPORT

DESCRIPTORS: \*Army equipment, \*Maintenance, \*Cost  
analysis, \*Savings, Distribution functions,  
Sampling, Standard deviation, Statistical tests,  
Exponential functions  
IDENTIFIERS: Lognormal density functions, Chi  
square tests, Exponential density functions

(U)

(U)

Where equipment can be put back into operation by a  
quick remove, and replace operation maintenance  
repair times can be adequately described with an  
exponential distribution. A new test plan on the  
mean is introduced, which assumes an exponential  
distribution of maintenance repair times and is based  
upon the chi square statistic. An adoption and use  
of this test plan could save the government as much  
as \$2,400 on each maintainability demonstration.  
At higher levels of maintenance, the distribution  
of repair times was predominantly log normal.  
However, there were some exceptions. Test  
Plans 1 and 2 of MIL-STD-471A can safely be  
used in these situations. It is also pointed out  
that an optimum test plan for the log normal  
distribution, and other two parameter distributions  
would test for the mean and standard deviation of the  
distribution. Therefore, a new test plan is  
introduced, which tests for the standard deviation of  
the maintenance repair time distribution.

(Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 773 848 17/9

RCA MISSILE AND SURFACE RADAR DIV MOORESTOWN N J

Synchronous Satellite Tracker  
Investigation.

(U)

DESCRIPTIVE NOTE: Final rept. 23 Feb 72-21 May 73.  
NOV 73 253P Gross, S. D. ; Liston, J. ;  
CONTRACT: F30602-72-C-0225  
MONITOR: RADC TR-73-277

UNCLASSIFIED REPORT

DESCRIPTORS: \*Satellite tracking systems. \*Radar  
tracking. Phased arrays. Synchronous satellites.  
Performance (Engineering). Costs. Optimization.  
Very high frequency. Ultrahigh frequency. Computer  
programs

IDENTIFIERS: Cost comparison

(U)

(U)

IAC ACCESSION NUMBER: GC-740372

IAC DOCUMENT TYPE: GACIAC -HARD COPY--

The study provides a design analysis and cost  
optimization on a phase array radar capable of  
detecting and tracking targets located at synchronous  
altitudes and beyond. The report describes  
parametric radar performance and cost models for  
several generic radar systems which were sized and  
optimized to satisfy the above requirements. The  
results of a parametric cost comparison among the  
various candidates is given and design detail and  
preliminary absolute cost data are presented for two  
system candidates selected for further study.  
These candidates are: (1) a phase-phase  
steered VHF (140 MHz) radar configuration which  
uses a tetrode (EIMAC 4CPX250K) power amplifier  
module per element in the transmit array and (2)  
a UHF (435 MHz) time scanned array radar  
(TSAR) configuration. (Author)

(U)

IAC SUBJECT TERMS: G--(U)RADAR. PHASED ARRAY RADAR.  
RADAR SURVEILLANCE. ARTIFICIAL SATELLITES. SYNCHRONOUS  
SATELLITES. REMOTE SENSING. SPACECRAFT TRACKING. SPACE  
SURVEILLANCE (GROUND BASED). TRACKING RADAR. RADAR CROSS  
SECTIONS. COST ANALYSIS. ORBITS. DETECTION PROBABILITY.  
TARGET SIGNATURES. GROUND BASED DETECTORS. SEARCH RADAR.  
SLANT RANGE. FALSE ALARMS. COMPUTER MODELS. COMPUTERIZED  
SIMULATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 773 014 13/10 5/5

FRANKEL (E G) INC CAMBRIDGE MASS

Life Cycle Cost Analysis of Merchant Ship  
Expeditionary Logistic Facilities.

(U)

DESCRIPTIVE NOTE: Final rept. 29 Jun-15 Oct 73.  
OCT 73 152P Frankel, Ernst G. ; Johnson,  
Arthur W. ; Padis, Alexander A. ;  
REPT. NO. 1039(G)-3  
CONTRACT: DAAK02-72-C-0021

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-741 221.

DESCRIPTORS: \*Merchant vessels. \*Logistic support.  
Cost analysis. Logistics. Logistics planning.  
Cranes. Barges. Unloading. Cargo ships

(U)

The report develops and delineates the ten-year  
life cycle cost of six merchant ship expeditionary  
logistic facilities (ELFs), selected by the  
Naval Facilities Engineering Command, in the  
format of U. S. Army Regulation No. 37-18.  
The merchant ships selected include two barge  
carriers, three bulk carriers and one dry cargo  
carrier. (Author)

(U)

AD- 773 848

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AD- 773 014

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 772 078 5/1 15/5

LOGISTICS MANAGEMENT INST WASHINGTON D C

Guide for Monitoring Contractors Indirect Costs.

(U)

DEC 73 122P

REPT. NO. LMI-72-17

CONTRACT: SD-321

PROJ: SD-321-173

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military budgets, \*Contracts, \*Cost analysis, Logistics support, Management planning and control, Forecasting  
 IDENTIFIERS: \*Indirect costs

(U)  
(U)

Pursuant to Task Order 72-17, the report is submitted in the form of a proposed guide for use by government monitors to obtain better control of contractors' indirect costs in government contracts. It contains sections on budget control and reporting. Guidance is provided for evaluating the reasonableness of budgeted costs through comparison and engineering techniques. The guide is especially applicable to the monitoring of costs at plants which perform major government contracts.  
 (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 771 989 5/3 15/5

GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS DIV

Economic Analysis Handbook Theory and Application. Volume IV. Case Studies.

(U)

DESCRIPTIVE NOTE: Contract rept. (Final). Sep 72- Aug 73.

NOV 73 168P

Statement. Alfred D. Bennett.

Walter H. :

REPT. NO. OAD-CR-22-Vol-4

CONTRACT: DAHCR-69-C-0017

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3. AD-771 986.

DESCRIPTORS: \*Army, \*Economics, Management planning and control, Logistics support, Cost analysis, Maintenance, Data processing, Sensitivity

(U)

IDENTIFIERS: \*Economic analysis, Benefit cost analysis, Sensitivity analysis

(U)

The four-volume handbook is designed as a practical guide for preparers and reviewers of Army economic analysis studies. The goal is to facilitate improved analyses which will lead to better decisions and use of Army resources. Economic analysis in the context of this handbook is concerned with the costs and benefits of alternative ways of accomplishing a particular task. The handbook is intended for analysis of investment projects yet to be finally approved or disapproved. It is not intended to provide insights on the best way to justify prior decisions on investment projects. Volume four provides two case studies of actual Army economic analyses. Each case study describes and evaluates the pertinent analyses and presents a catalog of lessons learned. The case studies helped shape the content and extent of attention given to various subjects in Vols one to three and provided illustrative examples.  
 (Modified author abstract)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 771 986 5/3 15/5

GENERAL RESEARCH CORP MCLEAN VA OPERATIONS ANALYSIS DIV

Economic Analysis Handbook Theory and Application. Volume III. Guide for Reviewers of Economic Analysis.

(U)

DESCRIPTIVE NOTE: Contract rept. (Final). Sep 72-Aug 73.

NOV 73 49P Bennett, Walter H. ;Stament.

Alfred D. ;

REPT. NO. OAD-CR-22-Vol-3

CONTRACT: DAHC19-69-C-0017

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2. AD-771 986 and Volume 4. AD-771 989.

DESCRIPTORS: \*Army, \*Economics, Management planning and control, Logistics support, Decision making, Cost analysis

(U)

IDENTIFIERS: \*Economic analysis, Benefit Cost analysis

(U)

The four-volume handbook is designed as a practical guide for preparers and reviewers of Army economic analysis studies. The goal is to facilitate improved analyses which will lead to better decisions and use of Army resources. Economic analysis in the context of this handbook is concerned with the costs and benefits of alternative ways of accomplishing a particular task. The handbook is intended for analysis of investment projects yet to be finally approved or disapproved. It is not intended to provide insights on the best way to justify prior decisions on investment projects. Volume three is written for reviewers of economic analyses. It is presented in terms of a series of key questions addressing such matters as assumptions, methodology, formulation of alternatives, and presentation of results. (Modified author abstract)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 771 957 13/9 13/8

SUMMA CORP CULVER CITY CALIF HUGHES HELICOPTERS DIV

Development of a Low-Cost Composite Die Using High-Energy-Rate Forming (HERF).

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 73 53P Bingle, Gordon K. ;Leach.

Joseph F. , Jr.

REPT. NO. HH-73-76

CONTRACT: DAAG46-73-C-0026

MONITOR: AMWRC CTR-73-43

UNCLASSIFIED REPORT

DESCRIPTORS: \*High energy rate forming, \*Dies, Titanium alloys, Stainless steel, Helicopters, Fabrication, Cost, Reduction

(U)

IDENTIFIERS: Titanium alloy 6Al 4V, Steel 321

(U)

A program was conducted to design, fabricate, and test/evaluate a low-cost composite die system for high-energy-rate forming (HERF) of titanium and high-temperature alloy parts commonly used on helicopters. The composite die design was evaluated by conducting forming operations on seven pieces of 321 stainless steel and eight pieces of 6Al-4V titanium alloy. The composite die met the design objectives of low cost (half that of conventional dies), short lead time (at least half that of conventional dies), and medium life (500 cycles). (Modified author abstract)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 771 793 9/2

INFORMATICS INC ROCKVILLE MD

Intelligence System Designer's Memory  
Evaluation Program.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 72-Aug 73.  
NOV 73 131P Savas, Marv Ann ; Corley.

Steven :

REPT. NO. TR-73-1561-1  
CONTRACT: F30602-72-C-0360  
MONITOR: RADC TR-73-328

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Memory devices. \*Cost effectiveness.  
\*Computerized simulation. \*Computer programming.  
Instruction manuals. Performance (Engineering).  
FCRTRAM

(U)

IDENTIFIERS: Performance evaluation. HIS 635  
computers. GESIM programming language

(U)

The selection of storage equipment is an integral part of intelligence systems design. Intelligence Data Handling Systems are characterized by large files whose elements are constantly accessed, updated, and/or deleted by a number of processes and procedures. Too often, the minimum cost of a system is not attained due to the difficulties of comparing the cost and/or technical performance of various storage devices. The Memory Evaluation Program has been designed to assist in the determination of the best or, in some cases, a feasible solution to meet storage requirements. It is a simulation program based upon mathematically-sound principles that closely parallel the procedures used by large-scale computers to perform input/output operations with storage devices. Therefore, it is possible to study more alternative solutions and to have more performance data available with which to perform comparative analyses. Algorithms for evaluating magnetic tape devices, and direct access storage devices, have been included in the simulation programs. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 771 439 9/2 17/2

UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF  
INDUSTRIAL AND SYSTEMS ENGINEERINGComputer Network Usage--Cost/Benefit  
Analysis - I.

(U)

DESCRIPTIVE NOTE: Technical rept..  
DEC 73 29P Lientz, Bennet P. :  
REPT. NO. TR-5  
CONTRACT: N00014-67-A-0259-0027

## UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
DESCRIPTORS: \*Data transmission systems.  
\*Communications networks. Economic models. Cost  
effectiveness  
IDENTIFIERS: \*Computer networks. \*Benefit cost  
analysis

(U)

(U)

With the establishment of several computation-communication networks several questions arise as to the cost-effectiveness of a network for a particular user or potential user. Analysis is necessary to determine which software systems can be established and used on a network rather than on an internal machine of the user's organization. The timings of the transitions to the network must also be found. A methodology for cost-benefit analysis is presented. For multiple systems, an extended horizon, and restricted hardware resources an integer programming method is developed. Approximations for planning and stability are given. A numerical example is included. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 771 432 12/2

STANFORD UNIV CALIF DEPT OF STATISTICS

Denumerable State Markov Decision Processes  
with Unbounded Costs.

(U)

DESCRIPTIVE NOTE: Technical rept.,

NOV 73 62P Reed, Frank C. ;

REPT. NO. TR-157, TR-22

CONTRACT: N00014-67-A-0112-0052, NSF-GK-35491

PROJ: NR-042-002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by Contract  
N00014-67-A-0112-0058, TR-42.

DESCRIPTORS: \*Decision theory, \*stochastic  
processes, \*Linear programming, Probability density  
functions, Costs, Random variables, Theorems

(U)

IDENTIFIERS: \*Markov decision processes, Markov  
processes, SemiMarkov processes

(U)

The report establishes sufficient conditions for both the existence of stationary optimal policies and the optimality of stationary policies in Markov decision processes with unbounded costs. The optimization criteria considered are minimum expected discounted cost over an infinite horizon and minimum expected average cost per unit time. Sufficient conditions that one may frequently establish in applications are given for the existence of a stationary optimal policy for both optimization criteria. It is also shown that for both optimization criteria optimal stationary policies are associated with the solution of the usual functional equations that arise in Markov decision processes with bounded costs. With unbounded costs, however, one must place additional constraints on these solutions to assure that the implied stationary policy is optimal. (Author)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 771 102 17/2 20/6 1/3

NAVAL ELECTRONICS LAB CENTER SAN DIEGO CALIF

Fiber- and Integrated-Optic Communication  
Technology.

(U)

DESCRIPTIVE NOTE: Research and development rept. 1 Oct  
72-3: Mar 73.

AUG 73 41P Martin, W. E. ; Albares, D.

J. ;

REPT. NO. NELC-TR-1891

CONTRACT: ARPA Order-2158

UNCLASSIFIED REPORT

DESCRIPTORS: \*Optical communications, Fiber optics,  
Integrated circuits, Optical equipment,  
Waveguides, Infrared communications, Military  
applications, Feasibility studies, Cost  
effectiveness, Avionics

(U)

IDENTIFIERS: Optical waveguides, Benefit cost  
analysis

(U)

Applications assessment studies and a preliminary cost-benefit analysis are performed which indicate areas of definite performance gains and cost savings from use of fiber-optic and integrated-optical-circuit (IOC) technologies, particularly in avionics systems. Progress in fiber optics, which has made possible the use of conventional off-the-shelf components in proposed systems with immediate applications, is shown. Progress is also shown in IOC technology, particularly in modulators for use in proposed high-bandwidth systems. Several unique IOC devices are investigated which promise to have the capability to use extremely-wide-bandwidth optical waveguides. (Author)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 771 354 15/5

NAVY FLEET MATERIAL SUPPORT OFFICE MECHANICSBURG PA  
OPERATIONS ANALYSIS DEPT

Navy Systemwide Stock Rationing.

(U)

DEC 73 28P Biggins, J. A. ; Renke, H.

J. ;

REPT. NO. 105

PROJ: FMSO-971174

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Naval logistics. \*Inventory control.  
Cost analysis, Lead time  
IDENTIFIERS: Benefit cost analysis

(U)

(U)

The purpose of the study was to develop a Navy stock rationing policy for wholesale material. The study covers the following areas: (1) an analysis of existing Navy stock rationing practices; and (2) an analysis of a rationing policy with cost-benefit analysis. The study recommends, given certain conditions, a rationing policy based upon control levels. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 927 13/3 15/5 15/7

ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN  
ILLGuidance for Selection of Equipment  
Fleet.

(U)

DESCRIPTIVE NOTE: Technical rept..

OCT 73 38P Rood, Omar E. . Jr.

REPT. NO. CERL-TR-P-18

PROJ: DA-4-A-664717-D-895

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army operations. \*Construction equipment. \*Costs. Earth handling equipment. Road building equipment. Decision making. Production control. Mathematical models  
IDENTIFIERS: Cost estimating relationships

(U)

(U)

The report presents a guide for equipment fleet selection that will enable military engineers to accomplish their Theater of Operations construction projects at the lowest cost to the taxpayer. The equipment selection guide is presented in card format, which, after review and field-testing by the Engineer School, should be distributed to field engineers. The report also presents the consideration, methodology, and models used in the development of this equipment selection card. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 839 15/5 5/1

LOGISTICS MANAGEMENT INST WASHINGTON D C

Development of Cost Parameters and Inventory Level Decisions at DSUs (Direct Support Units),

(U)

NOV 73 99P

Kaiser, Robert D. ;Boisseau,

H. James ;

REPT. NO. LMI-73-8

CONTRACT: SD-321

PROJ: SD-271-182

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Army equipment, \*Inventory control,  
 \*Cost analysis, Mathematical models, Inventory,  
 Logistics, Costs, Savings, Decision making  
 IDENTIFIERS: \*Federal stock numbers,  
 CASPAR(Condensed Army Stock Plan  
 Analyzer), Condensed army stock plan analyzer

(U)

(U)

The Condensed Army Stock Plan Analyzer (CASPAR) Model, developed earlier by LMI, was revised and modified, to permit economic stockage decisions at Army Direct Support Units (DSUs) using a stockout cost imputed from customer specifications of minimum required service levels. The report outlines necessary changes to permit use of CASPAR, including cost-to-hold and cost-to-order. Evaluation of data resources revealed that available DSU data can be used to estimate values of the independent variables, for subsequent use in solution of the multiple regression model. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 746 5/9

\* CANADIAN COMMERCIAL CORP OTTAWA (ONTARIO)

A Conceptual Design for the Cost Evaluation of Alternative Educational Systems in Managing the Air Force Academy and Air Force ROTC.

(U)

DESCRIPTIVE NOTE: Final rept..

SEP 73 189P Judy, Richard W. ;Levine,

Jack B. ;Russel, R. Stephen ;Van Wijk, Alfons

;Wolfson, William G. ;

CONTRACT: F41609-71-C-0037

PROJ: AF-1125

TASK: 112503

MONITOR: AFHRL

TR-72-2

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air Force, \*Education,  
 \*Instructional materials, Models, Simulation,  
 Costs, Assessment, Universities, Budgets,  
 Planning, Canada  
 IDENTIFIERS: \*Air Force Academy, \*Air Force  
 Reserve Officers Training Corps

(U)

(U)

Designs of two models customized to the management needs of the U.S. Air Force Academy and the Air Force (ROTC) Reserve Officers Training Corps are detailed. The model, upon implementation, would permit administrators to obtain answers to various 'what if....' management questions. The design of these models was based on a situation analysis of the U.S. Air Force Academy and the Air Force ROTC and a state-of-the-art analysis of existing educational cost models. No solution was attempted for the difficult problem of obtaining good measures of the effectiveness of educational systems; these are resource requirements prediction models. This effort has produced customer participation and acceptance; implementation is for the future. (Modified author abstract)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 556 5/10

MICHIGAN UNIV ANN ARBOR ENGINEERING PSYCHOLOGY LAB

Costs and Payoffs in Perceptual Research.

(U)

DESCRIPTIVE NOTE: Technical rept.,  
OCT 73 60P Winterfeldt Detlof V. ;  
Edwards, Ward ;

REPT. NO. 011313-T

CONTRACT: N00014-67-A-0181-0049, ARPA Order-2105

PROJ: NR-197-021

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Perception(Psychology),  
Motivation, Costs, Response, Mathematical  
models

IDENTIFIERS: Payoffs

(U)

(U)

A persistent problem in psychological research that reaches conclusions about inaccessible processes or experiences inside a subject's head is to validate those conclusions--that is, to exhibit persuasive reasons to believe that emitted behavior in some sense faithfully reports inaccessible processes. In the mid-1950s, perceptual researchers widely adopted an approach that might be called validation by cupidity. If the experimenter is willing to define a correct response, he can reward the subject for correct responses and not for wrong ones; however, costs and payoffs are rather feeble means of instructing a subject what to do, or of ensuring that he does it. (Modified author abstract)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 769 905 10/2

UNION CARBIDE CORP CLEVELAND OHIO CONSUMER PRODUCTS  
DIV

Low Cost Oxygen Electrodes.

(U)

DESCRIPTIVE NOTE: Interim rept. no. 4 (Final). 31  
Jan-11 May 73.JUL 73 106P Kordes, K. V. ; Scarr, R.  
F. ;

CONTRACT: DAAK02-71-C-0297

PROJ: DA-T-661102-A-34-A

TASK: 1-T-661102-A-34-A-03

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated Mar 73. AD-  
766 773.

DESCRIPTORS: (\*Electrodes, \*Fuel cells),  
(\*Oxygen, Electrodes), (\*Air, Electrodes),  
Carbon, Platinum, Teflon, Catalysts, Supports,  
Phosphoric acids, Stability, Manufacturing  
methods, Reliability, Fabrication, Costs  
IDENTIFIERS: \*Hydrogen air fuel cells, Performance  
evaluation

(U)

(U)

The purpose of this contract was the development of a low cost air electrode for medium temperature (130C) immobilized phosphoric acid (matrix) fuel cell. Thin carbon electrodes catalyzed with 1 to 2 mg Platinum per sq. cm performed on the average between 0.55 and 0.60 volt (terminal voltage) at 100 mA/sq. cm. X-ray fluorescence was used to determine the distribution and the amount of catalyst actually deposited. Broadening of the X-ray diffraction lines due to scattered radiation indicated a Pt-crystallite size ranging from 70 to 120 Å. Long-term testing of these electrodes has shown that the chemical and mechanical stability of the catalyst and structural material are good, i.e., operation for over 1000 hours above 0.6 volt was achieved. The degradation rate beyond 500 hours was extremely low (10 mV per 1000 hours). Carbon anodes with one mg Pt/sq. cm showed a remarkable resistance to Co-poisoning.

(Author)

(U)

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## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 769 801 15/5 12/2 5/1

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Minimizing the Cost of Projects in Naval  
Shipyards. (U)DESCRIPTIVE NOTE: Doctoral thesis,  
SEP 73 177P Shackleton, Norman John, Jr;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*Shipyards, Cost effectiveness),  
(\*Job, \*Scheduling), Management planning and  
control, Manpower, Costs, Nonlinear programming,  
Linear programming, Dynamic programming, Quadratic  
programming, Allocations, Network flows, Theses,  
Computer programs, Navy (U)IDENTIFIERS: Integer programming, Resource  
allocation (U)

The thesis is concerned with a problem of scheduling that arises in naval shipyards as well as in many other organizations. The problem considered is that of minimizing the total cost of a project with limited manpower available from the various shops and where the number of mandays to accomplish each activity in the project is specified. Total project cost consists of normal direct labor cost, overtime cost, and a penalty for exceeding some specified target date. It is shown that this problem includes several other, more common scheduling problems such as job-shop scheduling. The relationship among the various problems is described including the use of existing solution procedures to solve special cases of the shipyard problem. (Modified author abstract) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 768 983 8/13 8/7

OXFORD UNIV (ENGLAND) DEPT OF AGRICULTURAL SCIENCE

The Cost-Effectiveness of Terrain  
Evaluation. Volume 1. Outline of Project:  
Field Work in 1971. (U)DESCRIPTIVE NOTE: Final technical rept..  
SEP 73 131P Beckett, P. H. T. ;  
CONTRACT: DAJA37-71-C-0697

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SOILS, GEOLOGICAL SURVEY), TERRAIN,  
MAPPING, COST EFFECTIVENESS, GREAT BRITAIN (U)  
IDENTIFIERS: \*SOIL SURVEYS, SOIL CLASSIFICATION (U)

The aim of this project is to analyse the influence of all relevant choices between procedures for sampling, classifying, and mapping soils or soil properties, and for evaluating and presenting soils information, on the truth and reliability of the result. The results are expected also to be applicable to maps, etc., of the other terrain properties. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 768 826 15/5 5/1

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA

The Change Process in Weapons System Acquisition.

(U)

DESCRIPTIVE NOTE: Final rept.,  
 AUG 73 93P Douglas, William J. ;  
 CONTRACT: DAHC15-73-C-0200

## UNCLASSIFIED REPORT

Availability: Available in microfiche only. x  
 SUPPLEMENTARY NOTE: Prepared in cooperation with Ketrion,  
 Inc., Wayne, PA. Rept. no. KTR-703-2.

DESCRIPTORS: (\*GOVERNMENT PROCUREMENT, WEAPON SYSTEMS),  
 COSTS, CONFIGURATION, MILITARY REQUIREMENTS, GRAPHICS,  
 DESIGN, MANAGEMENT PLANNING AND CONTROL (U)  
 IDENTIFIERS: \*BENEFIT COST ANALYSIS, LOGISTICS  
 MANAGEMENT (U)

The change process in weapons system is evaluated with regard to cost growth, time, and change volume. Configuration management procedures are reviewed and the volume of ECP's is related to some specific weapons systems and military agencies. The causes of change are examined and recommendations are made for improving the process. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 768 787 15/5

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

Guidelines for Design to Unit Production Cost (DTUPC).

(U)

DESCRIPTIVE NOTE: Technical rept.,  
 OCT 73 19P Trigg, Clifton T. ;  
 REPT. NO. ECCM-4162

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*ARMY PROCUREMENT, MILITARY REQUIREMENTS),  
 DESIGN, COSTS, PRODUCTION (U)  
 IDENTIFIERS: DESIGN TO COST ANALYSIS (U)

The introduction of DOD Directive 5000.1, AR 1000-1 and the new material acquisition guidelines has been followed by numerous directives, policy statements, and similar papers that philosophically address the issue of Design to Unit Production Cost (DTUPC). The guidance on DTUPC has been evolutionary in character, and therefore, the report represents a synopsis of the more salient points of DTUPC implementation. As such it describes the DTUPC, explores the criteria of when it should be applied, suggests methods for development of the DTUPC, and provides guidance for the establishment of tracking procedures. The report is of an abstract nature, to be used as a ready reference. It is not meant to be definitive to the point of addressing the DTUPC, as would be the case in a handbook or procedural document. As the DTUPC philosophy continues to evolve and experience is gained, more detailed procedural documents will be published. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 768 731 15/5 5/1

NAVY FLEET MATERIAL SUPPORT OFFICE MECHANICSBURG PA  
OPERATIONS ANALYSIS DEPTApplication of the Penalty Cost Model to  
Centrally Managed Items, (U)OCT 73 35P Crum, G. S. ;  
REPT. NO. 102  
PROJ: FMSO-971164

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*NAVAL EQUIPMENT, \*INVENTORY CONTROL),  
COSTS, MATHEMATICAL MODELS, NAVAL PROCUREMENT,  
SENSITIVITY, DECISION THEORY (U)  
IDENTIFIERS: COMPUTERIZED SIMULATION (U)

The report compares and evaluates the current UICP (Uniform Inventory Control Point) physical inventory selection method with PCM (Penalty Cost Model). The report also evaluates the sensitivity of parameter changes in the UICP physical inventory program. Analysis of ICP inventories demonstrated that the number of inventories can be drastically reduced without adversely affecting requisition effectiveness while also increasing the net worth of taking the inventory. Thus, inventorying resources are used in a more cost effective manner. (Modified author abstract) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 768 363 14/4

POLYTECHNIC INST OF BROOKLYN N Y DEPT OF ELECTRICAL  
ENGINEERING AND ELECTROPHYSICSRedundant Spares Allocation to Reduce  
Reliability Costs. (U)SEP 73 43P Sinkar, Sharad G. ; Shaw,  
Leonard ;  
REPT. NO. EER-104  
CONTRACT: N00014-67-A-0438-0012  
PROJ: NR-042-301

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*RELIABILITY(ELECTRONICS), OPTIMIZATION),  
(\*REDUNDANT COMPONENTS, SPARE PARTS),  
FAILURE(ELECTRONICS), COSTS, PROBABILITY, REPLACEMENT  
THEORY, MODULES(ELECTRONICS), COMPUTER PROGRAMS,  
INTEGRATED CIRCUITS, INVENTORY CONTROL (U)  
IDENTIFIERS: ALLOCATION MODELS, FAILURE RATE  
FUNCTIONS (U)

Due to rapid developments in technology, provision of adequate number of spares at the time of acquisition of equipment has become a significant problem. Increased complexities of modern electronic equipments have resulted in modular designs. In the event of failure of one such a module, it is readily removed and replaced by a new one from the inventory. The problem considered here is the optimal selection of the inventory of spares for a system build from two kinds of modules, the larger of which can be contacted so it performs the role of the smaller one. The optimal inventory is the least costly one which achieves a specified probability that the spares will not be exhausted over the design lifetime. For some costs and failure rates it is most economical to use the larger module for both roles because of the resulting increase in flexibility in the deployment of a single type of spare module. The problem has been approached by analytical as well as simulation methods. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 768 292 10/2

NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF

Earth Heat Sinks for Underground Power Sources.

(U)

DESCRIPTIVE NOTE: Technical note.

AUG 73 83P Gang, S. C. :

REPT. NO. NCEL-TN-1306

PROJ: ZR000-01

TASK: ZR000-01-139

UNCLASSIFIED REPORT

DESCRIPTORS: (\*POWER PLANTS(ESTABLISHMENTS), \*HEAT SINKS), UNDERGROUND STRUCTURES, SOILS, COST EFFECTIVENESS, COMPUTER PROGRAMS, CONDUCTION(HEAT TRANSFER), CIVIL DEFENSE

(U)

The cost effectiveness of earth heat sinks for underground power plants operating in a closed cycle over limited durations in time was determined through a transient heat conduction analysis. A comparison of heat absorption capacity of earth heat sinks per cubic foot volume with the capacities of stored water and stored ice heat sinks was carried out for a specific set of operating conditions. The comparison has shown that the cost of an earth heat sink using select backfill is approximately 8 and 14% of the cost of a stored ice heat sink, and approximately 10 and 23% of the cost of a stored water heat sink at sites with full and zero water tables, respectively. The overall volume of the earth heat sink was estimated to be 0.8 and 1.5 times the volumes of stored water and stored ice heat sinks, respectively. It is recommended that earth should be considered as an alternative waste heat sink for limited duration, closed cycle underground power systems because of its simplicity and lower cost. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 768 133 1/3 5/3

ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING CENTER

Minimum Life Cycle Costing for a V/STOL Transport.

(U)

73 108P Smith, Thomas W. :

REPT. NO. USAMC-ITC-1-73-21

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHORT TAKEOFF AIRCRAFT, COSTS), VERTICAL TAKEOFF AIRCRAFT, AIRFRAMES, SPARE PARTS, MAINTAINABILITY, LIFE EXPECTANCY, PROCUREMENT, COMPUTER PROGRAMS  
IDENTIFIERS: COST ESTIMATING RELATIONSHIPS, COST ESTIMATES, \*LIFE CYCLE COSTING

(U)

(U)

The report proposes a new methodology for life cycle costing. In particular, a Vertical/Short Take-off and Landing (V/STOL) transport aircraft is considered. The costs included are those of research and development, production, maintenance, and operation. The minimum cost is found by the minimization of a function of three variables: maximum speed at best altitude, gross take-off weight, and maximum thrust per engine. Several methods of minimization were investigated, including geometric programming, Sequential Unconstrained Minimization Technique (SUMT), and the pattern search technique. The latter method was used with success and numerous computer runs were executed. The impact of the variation of many input parameters is shown in the results. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 767 698 6/5

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

On the Existence of Relative Moral Hazard.

(U)

DESCRIPTIVE NOTE: Technical rept.,

JUL 73 21P Whipple, David ; Brill, Edward

; Walsh, David ;

REPT. NO. NPS-55WP73071A

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MEDICINE, COSTS)

(U)

IDENTIFIERS: \*MEDICAL SERVICES, HEALTH INSURANCE

(U)

The paper points out that for purposes of estimating the total cost of various health care bills providing comprehensive prepaid care the relevant concept is not 'moral hazard' as usually defined, but rather relative moral hazard, the tendency for an individual to increase utilization over what they might have done under a fee-for-service plus coinsurance system. Although the empirical results are tentative and preliminary, they seem to indicate that great per capita jumps in the consumption of free inpatient care may well have been exaggerated. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 767 090 15/5 14/1

NAVY FLEET MATERIAL SUPPORT OFFICE MECHANICSBURG PA  
OPERATIONS ANALYSIS DEPT

Analysis of Criteria for Changing Standard Prices.

(U)

AUG 73 23P Neely, S. D. ; Searer, T.

E. ;

REFT. NO. 73

PROJ: FMSO-971157

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*INVENTORY ANALYSIS, \*COSTS), (\*NAVAL EQUIPMENT, \*NAVY BUDGETS), NAVAL PROCUREMENT, LOGISTICS, MAINTENANCE, MANAGEMENT PLANNING AND CONTROL, ECONOMICS, IMPACT

(U)

IDENTIFIERS: LOGISTICS MANAGEMENT, MANAGEMENT ANALYSIS, BENEFIT COST ANALYSIS, PRICES, COST COMPARISON, ECONOMIC ANALYSIS

(U)

Under current procedures, a Navy ICP (Inventory Control Point) notifies its customers of changes in repair part prices whenever the difference between the new standard price and the catalog price has an impact of at least \$50 on the value of annual demand. Upon completing an inspection of the Navy Electronics Supply Office, the Naval Supply Systems Command Inspector General recently recommended the policy be changed so that a new price is published whenever the difference between the new and published price is 10% or more. Certain costs are incurred each time a notification of a price change is given. A study was performed to determine the most economical policy for making price changes. The current policy was tested varying the \$50 impact value from \$.01 to \$160. The proposed policy was tested varying the 10% change value from 1/5% to 12%. The results indicated that the current policy requiring a \$50 impact on the value of annual demand is the most economical. (Modified author abstract)

(U)

AD- 767 698

UNCLASSIFIED

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AD- 767 090

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 767 071 9/2

UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES DEPT OF  
INDUSTRIAL AND SYSTEMS ENGINEERING

Cost Tradeoffs Between Local and Remote  
Computing.

(U)

DESCRIPTIVE NOTE: Technical rept..  
AUG 73 19P Lien.Z.Bennet P. ;  
REP. NO. TR-4  
CONTRACT: N00014-67-A-0269-J027

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DATA PROCESSING, COST EFFECTIVENESS),  
NETWORKS, TRAFFIC, DESIGN, OPTIMIZATION, STATISTICAL  
ANALYSIS, REMOTE CONTROL (U)  
IDENTIFIERS: MANAGEMENT INFORMATION SYSTEMS, BENEFIT  
COST ANALYSIS, \*COMPUTERS, \*NETWORKS, DATA BASES (U)

A major problem in communication networks analysis is to determine the degree of centralization of computer power that is desirable from both an operational and cost/benefit point of view. An example of this problem occurs in a manufacturing complex wherein decisions must be made on the distribution of data, process power, and redundancy. Because of the many parameters involving hardware, system software, and communications, a purely analytical approach is often impractical. The method here is to employ an analytical simulation model to obtain measures of cost, throughput, and response time. After the model itself is examined, focus is placed on several experiments which reveal the superiority of semi-centralized configurations. Application to logistic and manufacturing systems are explored along with the development of a network link construction method. The above mentioned experiments reveal the dependence of the analysis on the characteristics of the actual or anticipated message traffic. For a manufacturing system, a method is developed for isolating parts of a computer network as a specific degree of importance to the network functioning and failing. This is examined in the context of the message traffic rather than graph theoretic methods.

(U)

AD- 767 071

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 767 028 1/2

NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

Orientation-Error Accidents in Regular Army  
Aircraft During Fiscal Year 1970:  
Relative Incidence and Cost.

(U)

DESCRIPTIVE NOTE: Joint rept..  
AUG 73 46P Niven.Dorma I. :Hixson.W.  
Carroll :Spezia.Emil ;  
REPT. NO. NAWRL-1188  
PROJ: MF51.524  
TASK: M51.524.005  
MONITOR: USAARL 74-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AVIATION ACCIDENTS, ARMY AIRCRAFT),  
(\*VERTIGO, PILOTS), ERRORS, PERFORMANCE(HUMAN), COSTS,  
CASUALTIES, DAMAGE ASSESSMENT, HELICOPTERS, ARMY,  
NAVY (U)  
IDENTIFIERS: \*ORIENTATION ERROR ACCIDENTS (U)

The report is the fourth in a series of dealing with the pilot disorientation/vertigo accident problem in Army fixed wing and rotary wing flight operations. Incidence and cost data presented for fiscal year 1970 include a total of 81 major and minor orientation-error accidents (25 of which were fatal), resulting in 80 fatalities, 104 nonfatal injuries, and an over-all aircraft damage cost of \$19,355,689. The contribution of rotary wing accidents to this total was 75 accidents (24 of which were fatal), resulting in 79 fatalities, 98 nonfatal injuries, and over-all aircraft damage cost of \$17,060,490. (Author) (U)

AD- 767 028

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMC7

AD- 766 757 10/2

PRATT AND WHITNEY AIRCRAFT EAST HARTFORD CONN

Air Mobility Fuel Cell Study. (U)

DESCRIPTIVE NOTE: Technical rept. 9 May 72-9 Jan 73,  
JUL 73 189P Arnold, Jeffrey H. ;  
REPT. NO. PWA-4635  
CONTRACT: F29601-72-C-0083  
PROJ: AF-683M  
MONITOR: AFWL TR-73-26

UNCLASSIFIED REPORT

DESCRIPTORS: (\*FUEL CELLS, \*AUXILIARY POWER PLANTS),  
(\*ARMY EQUIPMENT, FUEL CELLS), COSTS, MILITARY  
REQUIREMENTS, FUEL OIL, CATALYSTS, DESIGN, GAS TURBINES,  
MOBILITY, COMPUTER PROGRAMS (U)  
IDENTIFIERS: LIFE TESTS, COST ESTIMATES,  
DESULFURIZATION (U)

An analytical and test program was conducted to evaluate the fuel cell power concept for the Bare Base mission which was selected as an example of an air mobility application. A life cycle cost model was developed and the life cycle costs of candidate fuel cell power systems were compared to the present Bare Base centralized power system. A study and test program was conducted to determine the feasibility of desulfurizing military JP-4 fuel and a powerplant test program was also conducted to evaluate operation on JP-4 fuel to meet typical air mobility loads. Study results verified that dispersed fuel cell power systems offer potential operational advantages in system installation, operation, and maintenance and are economically competitive with existing centralized power systems. The desulfurizer test program demonstrated the feasibility of desulfurizing JP-4 fuel. Powerplant tests demonstrated the capability to operate on JP-4 fuel and the ability to provide power compatible with air mobility loads. A comprehensive field experiment was planned as a logical next step to confirm the economic and operational conclusions of the study and provided detailed design information for an air mobility fuel cell system. (Author) (U)

AD- 766 757

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMD7

AD- 766 624 15/5 5/3

STATE UNIV OF NEW YORK BUFFALO SCHOOL OF MANAGEMENT

An Approach to the Allocation of Common Costs of Multi-Mission Systems. (U)

73 18P Crow, Robert Thomas :

UNCLASSIFIED REPORT

Availability: Pub. in Naval Research Logistics Quarterly, v20 n3 3431-447 Sep 73.  
DESCRIPTORS: (\*NAVAL OPERATIONS, LOGISTICS),  
(\*ECONOMICS, COSTS), PROCUREMENT, MATHEMATICAL  
MODELS (U)  
IDENTIFIERS: MARGINAL COSTS, ALLOCATION MODELS,  
PRICES, RESOURCE ALLOCATION, \*COST ANALYSIS (U)

Many Naval systems, as well as other military and civilian systems, generate multiple missions. An outstanding problem in cost analysis is how to allocate the costs of such missions so that their true costs can be determined and resource allocation optimized. The paper presents a simple approach to handling this problem for single systems. The approach is based on the theory of peak-load pricing as developed by Marcel Boiteux. The basic principle is that the long-run marginal cost of a mission must be equal to its price. The implication of this is that if missions can cover their own marginal costs, they should also be allocated some of the marginal common costs. The proportion of costs to be allocated is shown to a function of not only the mission-specific marginal costs and the common marginal costs, but also of the mission price. Thus, it is shown that measures of effectiveness must be developed for rational cost allocation. The measurement of effectiveness has long been an intractable problem. However, therefore, several possible means of getting around this problem are presented in the development of the concept of relative mission prices. (Author) (U)

AD- 766 624

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 766 376 15/5 14/1

CENTER FOR NAVAL ANALYSES ARLINGTON VA

A Critique of Cost Analysis.

(U)

JUL 73 15P Augusta, Joseph H. ;  
REPT. NO. CNA-Professional Paper-110

UNCLASSIFIED REPORT

DESCRIPTORS: (\*GOVERNMENT PROCUREMENT, \*COSTS),  
DEPARTMENT OF DEFENSE, COST EFFECTIVENESS, DECISION  
MAKING, WEAPON SYSTEMS

(U)

IDENTIFIERS: LOGISTICS MANAGEMENT, RESOURCE  
ALLOCATION, FISCAL POLICIES, \*COST ANALYSIS

(U)

Cost analysis as the term is used today in DoD, covers a broad range of activities from resource allocation for an entire service to detailed estimates of procurement and operating costs for individual weapon systems. These different estimates are used for a wide range of purposes; from helping decision-makers decide upon broad choices of strategies, to justification of new purchases. The methods employed range from sophisticated statistical techniques to 'back-of-the-envelope' calculations. All these things are properly included in cost analysis. However, the author describes some of the broader uses of cost analysis and to stay away from the specifics of individual weapon systems costing. The author concentrates on two broad areas of concern to today's cost analysts: one is procurement costing, the other is force level costing. Both these types of cost analyses have been strengthened in recent years; the latter because of the change in the way OSD manages the planning system - the introduction of Fiscal Guidance - and the former because of the change in the procurement system - the DSARC and the independent review system - plus a change in the attitudes of the people of the United States.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 766 342 21/8.2 13/8

BATTELLE COLUMBUS LABS OHIO

Press Brake-Roll and weld Fabrication of  
Prototype Large-Diameter Missile Motor  
Cases: Production Cost Estimates.

(U)

SEP 73 14P Mueller, R. A. ;  
CONTRACT: DAAH01-72-C-0821

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PRODUCTION CONTROL, COSTS), (\*ROCKET  
ENGINE CASES, MANUFACTURING), (\*SOLID PROPELLANT ROCKET  
ENGINES, ROCKET ENGINE CASES), WARGING STEELS,  
MARTENSITE, METAL SPINNING, METAL FORMING BRAKES,  
PRESSES(MACHINERY), MECHANICAL WORKING, WELDING

(U)

IAC ACCESSION NUMBER: MCIC-106362

IAC DOCUMENT TYPE: MCIC -HARD COPY--

The report analyses production costs for  
manufacturing 16 inches rocket motor cases by  
utilizing various fabrication techniques and varying  
casing materials.

(U)

IAC SUBJECT TERMS: M--(U)Missile Components, Pocket  
Motor Cases, Fabrication, Engineering Steel,  
D6AC, Maraging (300), AISI 4130, Welding, Shear  
Spinning, Costs, Computer Programming, Rolling.



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 766 232 10/2 20/9

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Development of Design Criteria, Cost Estimates, and Schedules for an MHD High Performance Demonstration Experiment.

(U)

DESCRIPTIVE NOTE: Final rept. Apr 72-Apr 73, AUG 73 117P Garrison, G. W.; Brogan, T. R.; Schmidt, H. J.; Nolan, J. J.; REPT. NO. AEDC-TR-73-115 PROJ: ARO-PF226

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARD, Inc., Tullahoma, Tenn. Rept. no. ARO-PMT-TR-73-75.

DESCRIPTORS: (\*MAGNETOHYDRODYNAMIC GENERATORS, PERFORMANCE(ENGINEERING)), (\*ELECTRIC POWER PRODUCTION, MAGNETOHYDRODYNAMIC GENERATORS), MAGNETOHYDRODYNAMICS, SUBSONIC FLOW, GAS TURBINES, EFFICIENCY, DESIGN, COAL, MAGNETS, COMBUSTION, HALL EFFECT, COSTS, ECONOMICS (U) IDENTIFIERS: GAS DYNAMICS, COST ESTIMATES, DESIGN CRITERIA (U)

The successful application of magnetohydrodynamics (MHD) for commercial, coal-fired, base-load power generation requires that the generator have an energy extraction ratio of approximately 0.20 with a turbine efficiency of 75 percent. There is a significant gap between this required performance and the generator performance which has been achieved to date. The commercial MHD concept is critically dependent upon the generator achieving this required performance, and it is therefore essential that a demonstration of this generator performance have the highest priority. Of equal importance, the generator channel configuration and operating conditions which are necessary in order to achieve the required performance will be determined while accomplishing the performance demonstration. Thus other Office of Coal Research (OCR) sponsored MHD research efforts can be directed toward the real problems and configurations as determined by solid experiments. (Modified author abstract) (U)

AD- 766 232

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 765 473 13/3 13/13 16/1

ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN ILL

Cost Performance Analysis of Portland Cement Concrete-Fibrous Polyester Concrete Material System (Sandwich Panels).

(U)

DESCRIPTIVE NOTE: Technical rept., JUL 73 75P Naus, Dan; Plummer, Fred; Merritt, Ron; REPT. NO. CERL-TR-M-45 PROJ: DA-4-KQ-78012-ACK-2 TASK: 4-KQ-78012-AOK-202

UNCLASSIFIED REPORT

DESCRIPTORS: (\*CONCRETE, COSTS), (\*UNDERGROUND STRUCTURES, \*SANDWICH PANELS), POLYESTER PLASTICS, CONSTRUCTION MATERIALS, REINFORCING MATERIALS, COMPOSITE MATERIALS, LOADS(FORCES), DEFORMATION, COST EFFECTIVENESS (U) IDENTIFIERS: POLYESTER FIBERS, PORTLAND CEMENTS, HARDENED INSTALLATIONS, CONCRETE POLYMER COMPOSITES (U)

Structural and shielding costs for hardened facilities represent a substantial portion of the construction effort in both cost and time. Presently, the selection of a material is made a priori in favor of reinforced concrete and steel which places limitations on conceptual designs. Potential does exist for reducing construction time and cost of hardened facilities by using new material systems which have been successfully formulated to meet given functional and performance requirements. The material system investigated using analytical and experimental techniques consisted of a conventional portland cement concrete beam which had a layer of fibrous polyester concrete at the compression surface. The analytical results were used to determine the cost-performance feasibility of the reinforced concrete-fibrous polyester concrete material system. The performance analysis results indicate that the reinforced concrete-fibrous polyester concrete material system is performance effective when using ultimate strength design procedures and thus can be used to produce smaller and lighter weight structural elements that are more deployable than the conventional reinforced concrete (U)

AD- 765 473

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ZOM07



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 765 446 5/3 12/2

OPERATIONS RESEARCH GROUP EDGEWOOD ARSENAL MD

The Magnitude of Variability in Cost Estimates.

(U)

AUG 73 19P DeArmon, Ira A. , Jr;  
REPT. NO. ORG-Mote-38

## UNCLASSIFIED REPORT

DESCRIPTORS: (+COSTS, UNCERTAINTY), CORRELATION  
TECHNIQUES, STOCHASTIC PROCESSES, ANALYSIS OF VARIANCE (U)  
IDENTIFIERS: STANDARD DEVIATION, +COST ESTIMATES (U)

The note proposes guidelines which might be useful in determining variability within cost comparison studies when the statistical variability is unknown. The definition and use of statistical uncertainty is discussed and illustrated with examples pertaining to site location evaluations. A logical means is suggested for deriving a statistical parameter from the engineering and managerial concept of percent error. Once a measure of the standard deviation of a cost has been postulated, use of such a measure is suggested for: Determining the variability of a total cost, Estimating a standard deviation of a total cost difference, and Determining a least significant difference for the comparison of several total cost estimates. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 763 878 15/5 14/1

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

Guidelines for Cost Estimation by Analogy.

(U)

DESCRIPTIVE NOTE: Technical rept..  
JUL 73 23P Trigg, Clifton T. ;  
REPT. NO. ECOM-4125

## UNCLASSIFIED REPORT

DESCRIPTORS: (-ARMY PROCUREMENT, +COST EFFECTIVENESS),  
STATISTICAL ANALYSIS, UNCERTAINTY, COSTS, INTEGRATED  
CIRCUITS (U)  
IDENTIFIERS: +COST ESTIMATES, COST ANALYSIS (U)

The increasing ability to tailor the design of electronic circuitry to unique requirements and the rapid technological advances in electronics tends to limit the derivation of mathematical cost estimating relationships (CER). Estimates made for electronic item costs therefore have relied heavily on engineering judgement and analogy estimating. The report covers, in an exploratory sense, the weaknesses of many estimates by analogy and the considerations that may be entertained to improve the estimating procedure. It is the intent of the report to provide a critique of a prior estimate, identify the basic problem areas, and provide suggested procedures to minimize the weaknesses of analogy estimating. Detailed step-by-step procedures are introduced and use of some basic statistical measures are presented. The report concludes with a checklist of questions the estimator should ask himself to determine the adequacy of his estimating endeavor. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 763 624 15/5

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA COST ANALYSIS GROUP

'Design to Cost' Buzz-Word or Viable Concept.

(U)

JUL 73 45P McCullough, James D. ;  
REPT. NO. P-968  
MONITOR: IDA/HQ 73-15304

UNCLASSIFIED REPORT

DESCRIPTORS: (\*GOVERNMENT PROCUREMENT, COST EFFECTIVENESS), (\*DEPARTMENT OF DEFENSE, \*CONTRACTS), MUNITIONS INDUSTRY, AIRCRAFT INDUSTRY, ELECTRICAL INDUSTRY, ECONOMICS, MILITARY BUDGETS, RESEARCH MANAGEMENT, LOGISTICS

(U)

'Design to Cost' is a phrase increasingly used in the DoD management literature. Accompanying the increased use has been a proliferation of interpretations of the phrase. This paper notes three of the interpretations currently in use: a buzz-word which is meant to attract attention to the cost problem, a concept of financial control whereby the Defense Systems Acquisition Review Council establishes a target cost or 'bogey' reflecting the latest estimate for systems during their validation and development phases, and the concept implied by DoD Directive 5000.1 whereby cost is an important parameter during trade-off studies of a system in its design phase. (Modified author abstract)

(U)



UNCLASSIFIED

CORPORATE AUTHOR - MONITORING AGENCY

ACADEMY OF HEALTH SCIENCES (ARMY) FORT  
SAM HOUSTON TEX HEALTH CARE STUDIES  
DIV

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HCSD-78-002-B  
AMOSIST Program Field  
Evaluation Physician Savings and  
Cost Effectiveness.  
AD-A061 146

ADJUTANT GENERAL CENTER WASHINGTON D  
C

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Army Club Management Study  
1977. Volume II. Appendices.  
AD-A059 767

ADJUTANT GENERAL CENTER WASHINGTON DC  
POSTAL DIRECTORATE

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PL-79-01  
Evaluation of Postage Meters  
and Decentralized Accountability  
for Official Mail Costs.  
AD-A073 003

ADMINISTRATIVE SCIENCES CORP  
ALEXANDRIA VA

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ASC-R-115  
An Operating and Support Cost  
Model for Aircraft Carriers and  
Surface Combatants.  
AD-A044 744

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ASC-R-116  
Naval Aircraft Operating and  
Support Cost Model - FY76 Revision.  
AD-A053 180

ADMINISTRATIVE SCIENCES CORP FALLS  
CHURCH VA

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ASC-R-118  
Navy Air-Launched Missile  
Operating and Support Cost  
Estimating Model.  
AD-A069 527

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ASC-R-120  
Naval Aircraft Operating and

Support Cost-Estimating Model -  
FY77 Revision.  
AD-A068 175

ADVISORY GROUP FOR AEROSPACE RESEARCH  
AND DEVELOPMENT NEUILLY-SUR-SEINE  
(FRANCE)

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AGARD-CP-278  
Low Cost Aircraft Flutter  
Clearance.  
AD-A079 293

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AGARD-LS-100  
Methodology for Control of Life  
Cycle Costs for Avionics Systems.  
AD-A069 973

ADVISORY GROUP FOR AEROSPACE RESEARCH  
AND DEVELOPMENT PARIS (FRANCE)

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AGARD-HIGHLIGHTS-74/1  
AGARD Highlights. March 1974.  
AD- 778 597

AERONAUTICAL SYSTEMS DIV WRIGHT-  
PATTERSON AFB OH

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Life Cycle Cost Management  
Guidance for Program Managers.  
AD-A069 388

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Design to Cost (DTC)  
Implementation Guidance.  
AD-A069 389

AERONAUTICAL SYSTEMS DIV WRIGHT-  
PATTERSON AFB OHIO

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ASD-COST RESEARCH-110A-REV  
Historical and Forecasted  
Aeronautical Cost Indices.  
AD-A022 794

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ASD-COST RESEARCH-117  
A Cost Performance Forecasting  
Concept and Model.  
AD-A022 793

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ASD-COST RESEARCH-117A  
Computer Program Input

CORP AUTHOR-MONITOR AGENCY-1  
UNCLASSIFIED ZOM07

Instructions for Cost Performance  
Forecasting Model.  
AD-A022 792

AERONAUTICAL SYSTEMS DIV WRIGHT-  
PATTERSON AFB OHIO FLOW PROGRAM  
OFFICE

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ASD/RAXA-76-2  
On High Support Costs and Poor  
Reliabilities in Air Force Aircraft  
Equipments.  
AD-A023 836

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ASD/RAXA-76-3  
On the Reduction of Operating  
and Support Costs of Air Force  
Aircraft.  
AD-A023 834

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ASD/RAXA-76-4  
Reducing Support Costs and  
Improving Reliabilities/Availabiliti  
es of Air Force Aircraft Equipmen:  
AD-A023 835

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ASD/RAXA-76-6  
LCC Analysis of Flight Recorder  
for F-4 Wild Weasel Aircraft.  
AD-A023 830

AEROSPACE GUIDANCE AND METROLOGY  
CENTER NEWARK AIR FORCE STATION  
OHIO

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AGMC-74-01011  
Proceedings of Quarterly  
Meeting of Life Cycle Cost Task  
Group of the Joint Services Data  
Exchange for Inertial Systems Held  
at Anaheim, California on April 23-  
25, 1974.  
AD- 785 390

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AGMC-74-011-2  
Three Life Cycle Cost Models  
for Inertial Systems.  
AD-A000 483

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AGMC-74-01211  
Proceedings of Quarterly



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Meeting of Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems held at Clearwater, Florida on January 22-24, 1974.

AD- 785 391

AGMC-74-01411

A Description of a Life Cycle Cost Model for Inertial Navigation Systems.

AD- 785 392

AGMC-74-020

Proceedings of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems Quarterly Meeting Held at Kennebunkport, Maine, on 11-13 June 1974.

AD- 787 195

AGMC-74-024

Avionics Cost Reduction Through Improved Tests.

AD- 787 188

AGMC-74-018

Proceedings of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems Quarterly Meeting Held at Cambridge, Mass., on 19 August 1974.

AD- 787 220

AGMC-74-046

Proceedings of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems Quarterly Meeting (5th) Held at Redondo Beach, California on 19 November 1974.

AD-A014 108

AGMC-75-001

AGMC LCC Model for Inertial Navigation Systems.

AD-A016 626

AGMC-75-002

Avionics Proliferation: A Life Cycle Cost Perspective.

AD-A016 478

AGMC-76-007

Proceedings of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems Quarterly Meeting (6th) Held at St. Petersburg, Florida, on 25-27 February 1975.

AD-A031 770

AGMC-76-008

Proceedings of the Life Cycle Cost Task Group of the Joint Services Data Exchange for Inertial Systems. Quarterly Meeting held at San Diego, Calif. on 24-26 February 1976.

AD-A035 091

AEROSPACE GUIDANCE AND METROLOGY CENTER NEWARK AIR FORCE STATION OHIO INDUSTRIAL ENGINEERING SUPPORT DIV

AGMC-XXR-76-3

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